

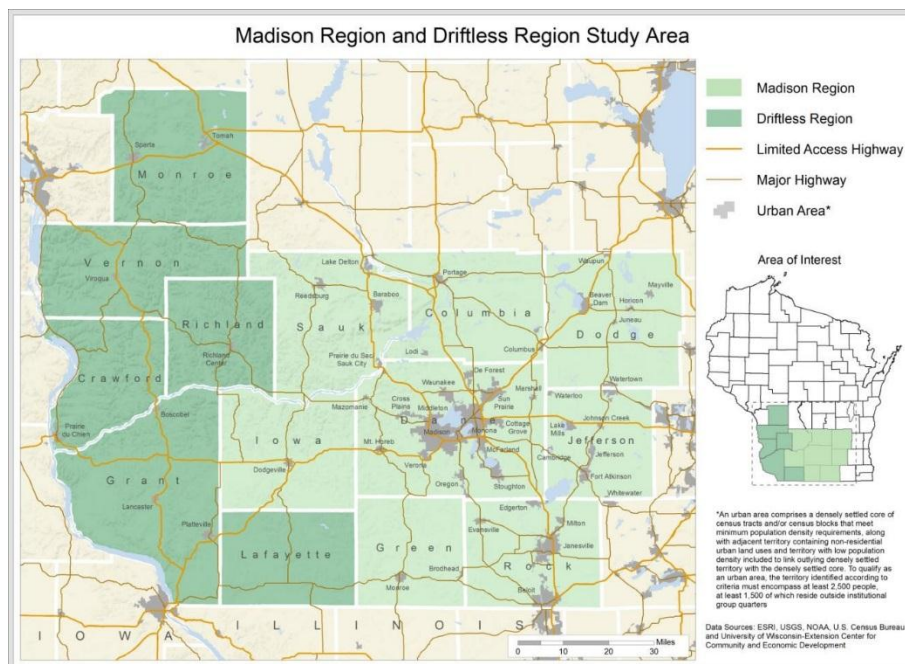
Introductory Narrative: Agriculture, Food and Beverage (AFB) is the Key Technology Sector (KTS) for the IMCP application being submitted by the Madison Region Economic Partnership (MadREP) on behalf of a 14-county region situated in south-central and southwestern Wisconsin (see map below). The KTS is a primary economic driver in our rural and semi-urban region due to the area's natural competitive advantage in climate, soils, **water resources, and rainfall**, as well as its superior infrastructure (including land use policy, research facilities, and supply chain and food safety apparatus) which has allowed the region's KTS cluster to grow into a top industry in the state as well as a top third performer in the nation.

Based upon these locational and infrastructure advantages, two of this country's major historic economic waves in the KTS industry were centered in our region. The *first wave* was dairy and cheese making. Wisconsin has historically ranked as a top national dairy producer and manufacturer as demonstrated by our region's 11.4 establishment location quotient (LQ) in the 3115 NAICS sector (dairy product manufacturing). A majority of the state's milk production is utilized by cheese plants, including 89 such plants located in the region. The dairy industry experienced a steep decline in early 2000,

which was turned around due to the development and growth of the artisan cheese market. The region's industry was able to quickly adapt and take advantage of this change in the marketplace due its existing infrastructure assets, including the Center for Dairy Research at UW-Madison which was at the epicenter of the revival with its Master Cheesemaker certificate program (the only one in the nation). Today, specialty cheese represents 22% of the state's cheese output. The *second great wave* was the rise of organic farming and processing. This wave was centered in southwestern Wisconsin, supported by research at UW-Madison. A major contributor to the evolution of this sector was the Coulee Region Organic Produce Pool (CROPP) which has grown to become Organic Valley, the largest organic farmer's cooperative in the world. The *third great wave*, which our region is in prime position to compete, is local and sustainable foods. UW-Madison is engaged in research to deal with issues involving logistics, traceability and food safety/security and entrepreneurs are beginning to develop new business models around innovations in production, healthy foods, processing and supply chain that will help quickly ramp sales in this market. Based upon these innovations, the now notable Wisconsin Driftless Region has the ability to become the Napa Valley of local foods.

Top Third Requirement

Wisconsin boasts an historic strength in agriculture, and is widely known as the dairy epicenter of the nation. The 2012 Census of Agriculture highlights Wisconsin's competitive advantage in this industry – the state's number of farms, total agricultural sales, and livestock sales are among the top ten in the nation.¹ Farms and agricultural businesses contributed \$88.3 billion in economic activity and 413,500 jobs to the state's economy in 2012. However, agricultural capacity extends well beyond dairy to encompass food processing, distribution, and agribusinesses, as evidenced by Wisconsin's #6 ranking



¹ USDA, 2012 Census of Agriculture, Preliminary Report Highlights

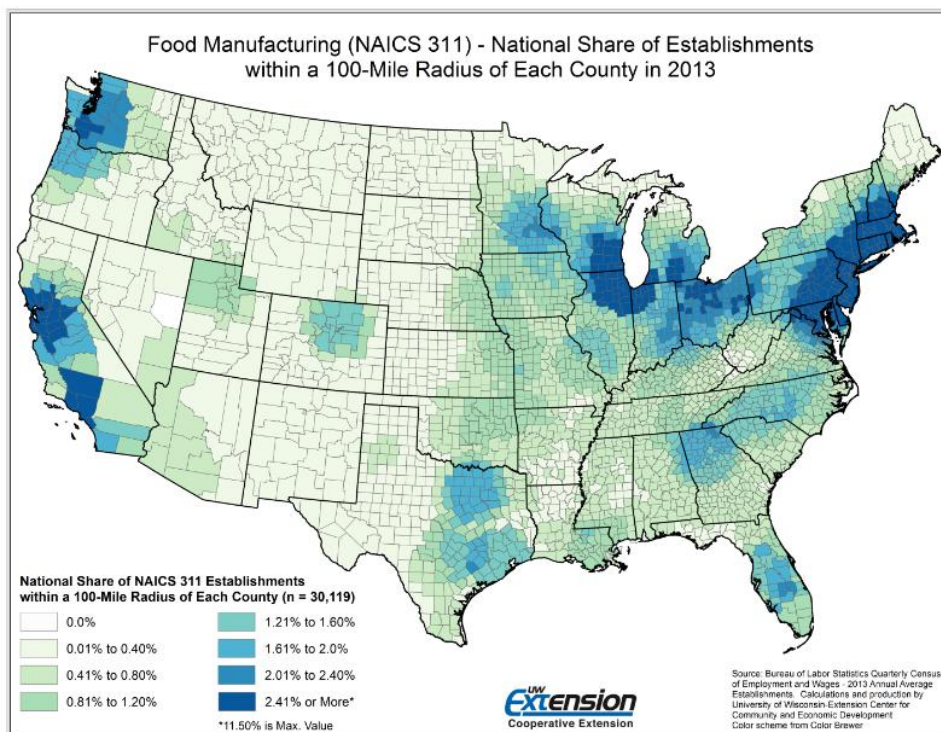
among all states for food manufacturing employment.² The industries that make up the Agriculture, Food and Beverage (AFB) industry continue to rise in importance for the state, with sales from farm-related activity and food processing combined increasing 49.3% from 2007 to 2012.³

The proposed 14-county IMCP Region is endowed with many assets in the AFB industry that make it essential to the success of the state's food production and processing economy, and should be leveraged to build economic opportunities. While the region accounts for 20.7% of the state's population, it produces nearly 1/3 of the state's total value added Gross Domestic Product (GDP) in agricultural production and 1/4 in food and beverage manufacturing. The region also contributes more than 1/3 of Wisconsin's total employment in agricultural production and nearly 1/4 of food and beverage manufacturing employment.⁴

Food manufacturing enterprises (NAICS 311) comprise a central part of AFB. With over 30,000 establishments and 1.47 million employees, food manufacturing is one of the nation's largest manufacturing sub-sectors in terms of employment, output, and GDP. Beverage manufacturing is also an important part of AFB, accounting for 6,500 establishments and 185,000 employees nationally. In the proposed 14-county IMCP Region, AFB industries combined provide employment for over 1/5 of the workforce, with agriculture employing over 84,000⁵, and food and beverage manufacturing (NAICS 311,

NAICS 312) employing approximately 14,000.⁶ Please take note that in the Midwest, our 14-county region is at the epicenter of the strongest concentration of NAICS 311 as noted in dark blue on the map above.

An analysis of the region's employment and establishment concentration in the food manufacturing industry reveals its strength and underscores its role as a major driver of the regional economy. At the 3-digit NAICS level, the region has location quotients (LQ) of 2.24 in employment and 2.41 in establishments (see tables 1-2).



² Matt Kures, UW-Extension, Center for Community and Economic Development, *Food Manufacturing potential in the Green Bay Region* (2014): 4.

³ Steve Deller, *Contribution of Agriculture to the Wisconsin Economy: Updated for 2012* (2014).

⁴ Matt Kures, *Abstract of the Madison Region's Agriculture, Food and Beverage Industry Cluster* (2014): 4-5,

⁵ UW-Extension - Cooperative Extension, *Economic Impacts of Agriculture in Wisconsin, County Impact Reports*

⁶ U.S. Department of Commerce, *County Business Patterns* (2012 data)

Table 1 – Employment Location Quotient (NAICS 311)

	Industry Employment	Total Employment	Location Quotient
IMCP Region	13,321	486,482	2.24

Source: U.S. Department of Commerce, County Business Patterns – 2012 figures

Table 2 – Establishment Location Quotient (NAICS 311)

	Industry Establishments	Total Establishments	Location Quotient
IMCP Region	241	28,770	2.41

Source: U.S. Department of Commerce, County Business Patterns – 2012 figures

A more detailed study of LQs in the food and beverage manufacturing industries highlights the region's particular strengths in a number of subsectors, most notably in dairy and animal food manufacturing. *Employment* LQs in 7 of the 9 food manufacturing subsectors exceed the IMCP top third requirement, and *establishment* LQs in 8 out of 9 food manufacturing subsectors as well as the *establishment* LQ for the *beverage manufacturing* subsector exceed the IMCP top third requirement (see tables 3-4).

Table 3 – Employment Location Quotients (4-digit NAICS)

NAICS	Description	IMCP Region Employment	IMCP Region LQ	Top-Third LQ Requirement
3111	Animal Food Manufacturing	735	3.94	1.33
3112	Grain and Oilseed Milling	322	1.42	1.07
3113	Sugar and Confectionery Product Manufacturing	360	1.21	1.12
3114	Fruit and Vegetable Preserving and Specialty Food	1,897	2.96	1.00
3115	Dairy Product Manufacturing	4,334	7.73	1.05
3116	Animal Slaughtering and Processing	3,915	1.92	1.53
3117	Seafood Product Preparation and Packaging	69	.53	1.00
3118	Bakeries and Tortilla Manufacturing	1,180	1.03	1.09
3119	Other Food Manufacturing	1,565	2.22	1.16
3121	Beverage Manufacturing	541	0.95	1.00

Source: U.S. Department of Commerce, County Business Patterns – 2012 figures; top-third LQ requirements provided by Economic Development Administration

Table 4 – Establishment Location Quotients (4-digit NAICS)

NAICS	Description	IMCP Region Establishments	IMCP Region LQ	Top-Third LQ Requirement
3111	Animal Food Manufacturing	28	4.28	1.42
3112	Grain and Oilseed Milling	7	2.22	1.23
3113	Sugar and Confectionery Product Manufacturing	16	2.17	1.30
3114	Fruit and Vegetable Preserving and Specialty Food	20	3.04	1.04
3115	Dairy Product Manufacturing	68	10.93	1.04
3116	Animal Slaughtering and Processing	31	2.23	1.26
3117	Seafood Product Preparation and Packaging	2	0.88	1.00
3118	Bakeries and Tortilla Manufacturing	45	1.09	1.00
3119	Other Food Manufacturing	24	1.89	1.02
3121	Beverage Manufacturing	29	1.51	1.00

Source: U.S. Department of Commerce, County Business Patterns – 2012 figures; top-third LQ requirements provided by Economic Development Administration

1.0 Workforce and Training

Current Capability: O*NET classifies occupations into job zones, which provide information on the level of preparation needed for particular occupations within an industry.¹ Although the KTS includes a mix of diverse occupations, 80 percent of U.S. jobs in NAICS 311-food manufacturing are associated with job zones 1 and 2: lower-to-middle skilled. Consequently, the industry provides opportunities for workers with a variety of skills, experience and educational attainment. Requisite credentials and skills in KTS occupations vary depending on the position, and range from little to no preparation to extensive preparation. Food manufacturing occupations often require the operation of specific machinery, as well as general labor such as packaging, material moving, and other types of production work. In agricultural positions, trainability is highly valued, and employers emphasize the importance of practical experience.² Desired skills for food processing occupations include knowledge of manufacturing skills, of safety procedures including food safety, problem solving abilities, and an awareness of the physical requirements of the job.³ While not exhaustive, Table 1.1 provides a snapshot of occupations and requisite skills in the job categories that make up the KTS.

Table 1.1 Occupations and Requisite Skills in the KTS

Area of KTS	SOC: Occupation	Skills, Job Zone
Plant and Animal Cultivation	45-2091: Agricultural Equipment Operators	Drive and control farm equipment to till soil and to plant, cultivate, and harvest crops. <i>Job Zone Two: Some Preparation Needed</i>
	45-2092: Farmworkers & Laborers, Crop, Nursery, and Greenhouse	Manually plant, cultivate, and harvest vegetables, fruits, nuts, horticultural specialties, and field crops. Use hand tools, such as shovels, trowels, hoes, tampers, pruning hooks, shears, and knives. <i>Job Zone One: Little or No Preparation Needed</i>
	45-2093: Farmworkers, Farm, Ranch	Attend to live farm, ranch, or aquaculture animals. Duties may include feeding, watering, herding, grazing, castrating, branding, de-beaking, weighing, catching, and loading animals. <i>Job Zone One: Little or No Preparation Needed</i>
Food Processing and Production	49-9041: Industrial Machinery Mechanics	Repair, install, adjust, or maintain industrial production and processing machinery. <i>Job Zone Three: Medium Preparation Needed</i>
	51-3092: Food Batchmakers	Set up and operate equipment that mixes or blends ingredients used in the manufacturing of food products. Includes candy makers and cheese makers. <i>Job Zone Two: Some Preparation Needed</i>
	51-9111: Packaging and Filling Machine Operators and Tenders	Operate or tend machines to prepare industrial or consumer products for storage or shipment. <i>Job Zone Two: Some Preparation Needed</i>
Research & Development	17-2021: Agricultural Engineers	Apply knowledge of engineering technology and biological science to agricultural problems concerned with power and machinery, electrification, structures, soil and water conservation, and processing of agricultural products. <i>Job Zone Four: Considerable Preparation Needed</i>
	19-1011: Animal Scientists	Conduct research in the genetics, nutrition, reproduction, growth, and development of domestic farm animals. <i>Job Zone Five: Extensive Preparation Needed</i>
	19-1012: Food Scientists & Technologists	Use chemistry, microbiology, engineering, and other sciences to study the principles underlying the processing and deterioration of foods; analyze food content to determine levels of vitamins, fat, sugar, and protein; discover new food sources; research ways to make processed foods safe, palatable, and healthful; and apply food science knowledge to determine best ways to process, package, preserve, store, and distribute food. <i>Job Zone Four: Considerable Preparation Needed</i>

Source: U.S. Department of Labor, O*NET Online

The 14-county region is home to a well-educated and skilled workforce. Regional institutions of higher education conferred over 2,700 degrees and certificates germane to AFB occupations in 2014, resulting in a significant number of new entrants into the labor force prepared for occupations in the KTS.⁴ Furthermore, the KTS employed approximately 98,000⁵ workers in agriculture, food and beverage manufacturing in 2011-2012, accounting for more than 20% of the region's total employment.

In 2013, the region's food manufacturing industry was comprised of 341 establishments, with dairy product manufacturing representing one of the largest regional concentrations in the entire nation.⁶ According to EMSI Analyst -- a database of labor market data, workforce intelligence and regional economic analysis produced by Economic Modeling Specialists International -- regional average earnings in food manufacturing exceeded both state and national figures in 2014. While regional workers had average earnings of \$58,974, state and national earnings were \$55,995 and \$53,025 respectively.⁷ These are higher wages for middle-skilled jobs than are paid by other industries employing middle-skilled workers, including the hospitality and professional services industries.

¹ O*NET Online, <http://www.onetonline.org/help/online/zones>.

² Meeting Minnesota's Workforce Needs, Industry Summary-Agriculture. December 2012.

³ Center on Wisconsin Strategy, *Seeds of Workforce Change: A Regional Approach to Improving our Economic Landscape in Southwest and South Central Wisconsin*, (July 2006).

⁴ National Center for Education Statistics, College Navigator.

⁵ UW-Extension - Cooperative Extension, *Economic Impacts of Agriculture in Wisconsin, County Impact Reports* (2011) and U.S. Census Bureau, *County Business Patterns* (2012)

⁶ National Establishment Time Series Data -- 2013 Summary.

⁷ Economic Modeling Specialists International, EMSI Analyst.

Current Institutions: The region is home to 12 private and public colleges, universities, and technical colleges as well as many additional organizations that provide education, training and apprenticeships. Table 1.2 summarizes the region's existing institutions that have programs in the KTS or could develop specialties helpful for the KTS.

Table 1.2 – Regional Institutions

University of Wisconsin (UW) System	UW-Madison; UW-Platteville; UW-Whitewater; UW-Richland; UW-Rock County; UW-Baraboo/Sauk County
Private	Beloit College; Edgewood College
Technical	Blackhawk Technical College; Madison College; Moraine Park Technical College; Southwest Wisconsin Technical College (SWTC)
Other Educational	Renk Agribusiness Institute; Community Groundworks at Troy Gardens
Training	UW-Madison Center for Integrated Agricultural Systems (CIAS); Wisconsin Center for Dairy Research (CDR); Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP); Organic Processing Institute; Michael Fields Agricultural Institute
Apprenticeship	Dairy Grazing Apprenticeship via Grassworks, Inc.
Workforce	Workforce Development Board of South Central Wisconsin (WDBSCW); Southwest Wisconsin Workforce Development Board; Wisconsin Women's Business Initiative Corporation (WWBIC); Urban League of Greater Madison; UW-Madison Office of Corporate Relations (OCR)

Source: Madison Region Economic Partnership

The University of Wisconsin (UW) system colleges produce graduates with certificates, and associates, bachelors, masters, doctoral, and post-doctoral degrees in the KTS including agriculture and applied economics, agricultural business management, agronomy, animal sciences, dairy sciences, fermentation, food science, and horticulture. The region's private colleges offer programs in biology, chemistry, environmental studies, and sustainability leadership. Regional technical colleges offer certificates and associates degrees in agribusiness, craft brewing, farm business and production management, industrial maintenance mechanic/technician, veterinary technician, food production, culinary arts, and many more programs relevant to the KTS. Madison College is the only technical college in the region to have received NSF-ATE funding, totaling \$5.3 million since 2006.

Programs offered at a majority of the institutions listed in Table 1.2 provide pathways for continuous learning that are valued by employers and lead to improved outcomes for employees, as oftentimes curricula are developed and implemented in direct response to input from the industry's employers. The dairy short courses at the CDR are among the most notable programs. Established in 1890, a collaborative team of the College of Agricultural and Life Sciences, Department of Food Science, CDR, and the Wisconsin Milk Marketing Board hold approximately 20 short courses each year that meet the needs of the current industry, maintain the knowledge and tradition of cheese and butter-making, and provide cutting-edge research-based education to industry. The CDR interacts with over 200 businesses annually, and over 1,000 industry employees attend a CDR short course each year.

UW-Madison consistently ranks as one of the most prolific research universities in the world, and is a major player in integrating research and development activities and education for the current and future workforce in the region. In 2012, CDR was awarded one of seven \$1 million i6 Challenge grants from the U.S. Department of Commerce, which is currently working to support the commercialization of research ideas that will positively impact economic development – from developing new products to creating higher value uses for cheese and dairy by-products. To keep the initiative going past the term of this grant, CDR has developed the Tech Transfer, University, Research, and Business Opportunity (TURBO) program.

The university houses 65 industry consortia and centers of expertise that partner with industry for research and development, and integrate their work with education to meet industry needs.⁸ Noteworthy for the KTS are the Food Research Institute (FRI), which focuses on conducting research to provide information, training, outreach, and service to enhance the safety of the food supply; and the Center for Integrated Agricultural Systems (CIAS) - created to build sustainable agriculture research programs that respond to farmer and citizen needs.

Since 2000, the Workforce Development Board of South Central Wisconsin (WDBSCW) has been working with employers, economic development partners, education leaders, and other community partners to organize and sustain regional manufacturing alliances who work together to identify and develop solutions that will respond to talent development and retention in the industry. Over the past years, these councils have worked to develop career pathways initiatives, including outreach to new workers, development of the Middle College Manufacturing Academy – manufacturing training specifically designed to support secondary education students -- and stackable training and credentials for both new and incumbent manufacturing workers. The WDBSCW also has a team of workforce development professionals within the One Stop System who are working directly with industry to recruit, train, place, and retrain long term unemployed workers in the industry. In the past 18 months, approximately 108 unemployed young adults and 68 long-term unemployed and underemployed adult participants entered or were trained in the manufacturing sector.

MadREP and its workforce partners are implementing a new web-based platform for career planning called Inspire Wisconsin. This platform creates bridges between employers, educators and students by connecting students and adult job seekers with work-based learning experiences and job opportunities within an array of industries including agriculture, food and beverage manufacturing, and distribution.

Gaps: The manufacturing industry projects a replacement need of 35% due to retiring workers over the next 7 years.⁹ While the food manufacturing sector tends to have one of the younger age distributions among manufacturing subsectors, as of 2013 more than 22% of regional food manufacturing employees were age 55 or older and approaching retirement (see figure).¹⁰ Ensuring the pipeline to replace workers that will be leaving the KTS in the near future will be a key challenge.

⁸ UW-Madison, Office of Corporate Relations.

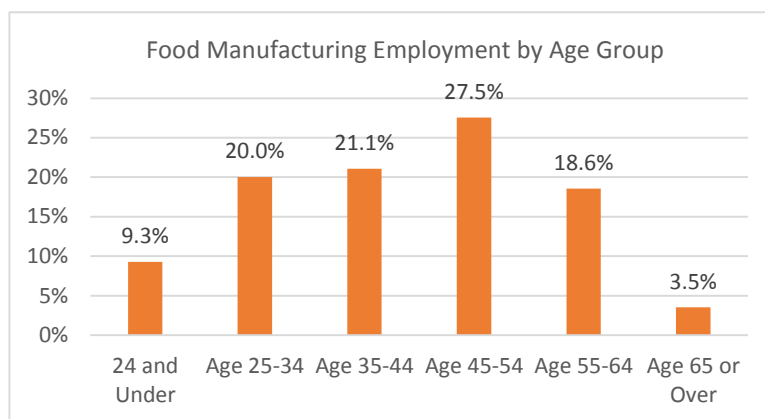
⁹ Wisconsin Department of Workforce Development, Economic Advisors (via Pat Schramm).

¹⁰ Source: U.S. Department of Commerce, Quarterly Workforce Indicators.

The agriculture industry finds attracting and retaining new hires a challenge, which will be compounded by the national wave of retirements that will hit the industry over the next several years. The industry needs to plan for succession by increasing student awareness of career opportunities and provide training to the next generation of farmers and food processors to fill the workforce pipeline.

Another trend in the KTS is the increasing use of technology, as the industry is experiencing increased computerization, automation, new packaging, transportation, and storing technologies that will require technicians and operators to acquire more advanced skills.

Plans: We propose the following workforce development related projects to address identified gaps in the KTS, provide employers in the KTS with skilled labor, and provide the workforce in the KTS with useful skills that lead to a career path.



- 1.1 *CDR: Certificate in Dairy Processing:* Create and execute unprecedented classroom and hands-on training for Wisconsin's dairy processing workforce.
- 1.2 *Madison College: Jefferson Food Production Training:* The Madison College Food Processing Curriculum was developed to offer accelerated training to entry and mid-level workers who are employed within the food processing manufacturing environment. It is important for the food processing segment of the manufacturing industry to establish training solutions that can be effective in the shortest time period, as 47% of the industry's workforce is 47 to 64 years of age.
- 1.3 *SWTC: Instrumentation Associates Degree Program:* The South West Electromechanical Technician program currently trains students to be generalists in the field of industrial maintenance. The proposed project would address specialization occurring in the industry, to proactively address both the current and advanced industrial maintenance training needs.
- 1.4 *SWTC: Agriculture Career Pathway:* The current siloed educational program options are not meeting the complex training needs of the agriculture industry. SWTC, UW-Platteville, 8 high schools, and 14 agriculture industry partners will develop and implement a comprehensive agriculture pathway framework designed to address the current and future job training needs of the agriculture community.
- 1.5 *Madison College: Reedsburg Farm Business Management Program:* The current Farm Business and Production Management program is a short-term technical diploma designed to be completed in 6 years, which is unsustainable given changes in the agribusiness industry and the current budgetary environment. By creating a hybrid district-wide Agribusiness Coordinator and by revising the curriculum to include more specific, shorter coursework and adding workshops and contracted consultation services, Madison College can provide for the needs of all agribusiness stakeholders while reducing operational costs.
- 1.6 *CIAS: School for Beginning Dairy & Livestock Farmers:* The Wisconsin School for Beginning Dairy and Livestock Farmers (WSBDF) will offer classroom instruction, on-farm internships, conference attendance, and networking opportunities, expand its distance education efforts, and assist other beginning farmer programs. The WSBDF emphasizes the business and financial planning knowledge required to start and run a successful dairy or livestock enterprise, and teaches managed grazing as an environmentally sound, profitable farm business model.
- 1.7 *CIAS: Specialty Crops Beginning Grower Training:* To bridge the information gap on the economics and quality of life issues on specialty crops farms by researching and disseminating reliable data and benchmarks on the apples, raspberries, cut flowers, and grapes industries.
- 1.8 *Sector67: Mobile Fabrication Laboratory:* Sector67 in partnership with regional educational partners will purchase, retrofit and program a Mobile Fabrication Lab and expand StartingBlock Madison's outreach in the STEM fields. The program will provide outreach to regional high school and college students, particularly those that grew up with agricultural experience.

2.0 Supplier Network

Current Capability: The health and robustness of the supply chain, including the investment made in physical infrastructure, is of critical importance to insuring the strength, value proposition and competitive advantage maintained by any industry. In the region, government, trade associations and private businesses have over time made the investment in this infrastructure, and have developed and nurtured the type of supply chain relationships that have allowed the region's KTS to grow into a top industry in the state as well as a top third performer in the nation. Businesses in the region's KTS currently generate over \$18.8B in economic value and have global reach which drive vital national exports that bring foreign wealth into the U.S. economy.¹¹

Key Firms in the KTS: The region's KTS supply chain has business presence in each supply segment. This type of vertical integration and vertical coordination of services, from raw materials through finished goods and consumer sales, is the hallmark of a mature system that provides additional value and strength to KTS businesses in the region. The area is well known for its ability to safely and efficiently produce

¹¹ Steven Deller, UW-Extension, Department of Agricultural & Applied Economics, Contribution of Agriculture to the Wisconsin Economy, 2014.

farm products and value added food products, such as cheese and meats, and move them into the marketplace. Key firms in the supply chain are identified by segment in Table 2.1. Included in the list are many large companies that have national scale and scope.

Table 2.1: Agriculture Food and Beverage Manufacturing Supply Chain

Supply Segments	Key Firms
Raw Materials: Production	Seeds: Jungs, Trelay Farms, Grow Alliance, Renk Seeds
	Production: 8,879 cattle farms; 3,420 dairy farms; 1,810 poultry and egg producers; 1,076 sheep and goat farms; 836 vegetable farms; 794 pork producers; 565 organic farmers; 452 aquaculture producers; 396 Orchards; 120 vineyards
	Farm Implement Manufacturers: J.I. Case, John Deere, Kuhn
Food Processing	Foremost Farms, Organic Valley, Country Hearth, Schoeps Ice Cream, Slaughterhouse, Kerry Foods, Hormel, Frito-Lay, Kraft Foods, New Glarus Brewery, Capital Brewery, Wollershiem Winery
	Commercial Kitchens: Wisconsin Innovation Kitchen, FEED Kitchens, VEDA Food Enterprise Center
Food Equipment Mfg.	Lyco Manufacturing, Edge Gear, Apache Stainless Equipment, Hughes Equipment, Kusel Equipment Co.
Packaging and Containers	Wisconsin Packaging, Innerpak, Kendall, Placon, Northland,
Inspection/Food Safety and Regulations	Dept. of Agriculture, Trade and Consumer Protection; Dane County Health Services; UW-Madison, College of Agriculture and Life Sciences (CALS)
Warehousing: Dry, Cold and Freezer	Central Storage, Midwest Warehouse, Organic Valley, Schoeps Ice Cream, Foremost Farms, Wisconsin Food Hub
Distribution	Sysco-US Foods, Nash Finch, Certco, Roundy's, R.E. Golden Produce, Loffredo Fresh Produce Company, V. Marchese, Maglio and Company, Reinhart Food Services, L&L Foods, Nesvigs, Elegant Foods, Edina Carriers, Lipari Foods, Heartland Fruit and Produce, Stoughton Trailers
Customers: Wholesale and Retail	Groceries: Nash Finch, Certco, Whole Foods Markets, Wal-Mart, Hy Vee, Roundy's, Willy Street Cooperative, Fresh Brands, Sentry Foods, Woodman's, Piggly Wiggly
	Restaurants: Sysco-US Foods, Food Fight Restaurant Group, Madison Originals
	Other: Second Harvest, Madison Public Market, Dane County Farmer's Market, Community Supported Agriculture, Institutional Food Markets (Farm to School programs, Hospitals, Institutions and Daycares)

Source: MadREP, UW-Extension and Census of Agriculture 2012

Factors which make the region's KTS unique nationally are: the close proximity of both manufacturing capacity with raw material production (both have high location quotients which is one of the KTS's key strengths), the large variety of raw material inputs produced in the region, the concentration of dairy and organic food processing, and the emerging opportunity in fresh market vegetables and other local foods.

Key Parts of the KTS Outside the Region: The region's 341 food manufacturing establishments are part of a larger intensity of food manufacturing that extends into Southeast Wisconsin and Northeast Illinois. When combined, this concentration of food manufacturing facilities is one of the largest in the nation. Specifically, over 16% of the nation's food manufacturing establishments are located within 250 miles of the region.¹²

Several firms located outside the region play a large role in ensuring the strength and vitality of the KTS's supply chain. These key external firms include: United Natural Foods, Inc. (UNFI - storage and distribution, Sturtevant, WI), Coyote Logistics (distribution, Chicago), Farm Logic d/b/a Testa (distribution, Chicago), Caterpillar (large and small farm equipment, Peoria), other small farm equipment and implement manufacturers, box and packaging manufacturers, glass container manufacturers and raw ingredient manufacturers (primarily producing flavoring syrups, fruit, corn sweeteners, shortening and margarine, flour and malt and refined sugar (see Table 2.2)).¹³ It is of critical importance that we continue to strengthen these assets and promote vertical coordination to maintain supply chain stability that will allow the industry to continue to grow in the region.

Table 2.2: Goods and Services Used by KTS Businesses in the Region

Product or Service Description	Gross Inputs (\$1,000)	Regional Inputs (\$1,000)	% Purchased in Region
Dairy Cattle and Mile Products	\$1,380,500	\$1,230,600	89.1%
Cheese	\$698,600	\$400,500	57.3%
Cattle from Ranches and Farms	\$505,000	\$259,000	51.3%
Wholesale Trade Distribution Services	\$358,200	\$282,400	78.8%
Truck Transportation Services	\$288,400	\$225,000	78.0%
Management of Companies and Enterprises	\$275,300	\$172,100	62.5%
Grains	\$214,000	\$66,300	31.0%
Fluid Milk and Butter	\$193,000	\$167,000	86.6%
Animal Products, except Cattle, Poultry and Eggs	\$185,600	\$78,800	42.5%
Paperboard Containers	\$180,400	\$26,000	14.4%

¹² Matt Kures, UW-Extension Community and Economic Development, Abstract of the Madison Region's Agriculture, Food and Beverage Industry Cluster, October 2014.

¹³ *Ibid.*

Metal Cans, Boxes and Other Metal Containers (Light Gauge)	\$162,400	\$66,100	40.7%
Flavoring Syrups and Concentrates	\$144,600	\$11,900	8.2%
Fruit	\$144,200	\$15,500	10.7%
Processed Animal Meat and Rendered Byproducts	\$134,600	\$59,500	44.2%
Oilseeds	\$122,400	\$16,100	13.1%
Dry, Condensed, and Evaporated Dairy Products	\$120,600	\$91,100	75.5%
Corn Sweeteners, Corn Oils and Corn Starches	\$106,000	\$8,800	8.3%
Electricity and Distribution Services	\$100,100	\$94,200	94.1%
Shortening and Margarine and Other Fats and Oils Products	\$99,000	\$1,200	1.2%
Soybean Oil and Cakes and Other Oilseed Products	\$91,600	\$7,200	7.8%
Canned, Pickled and Dried Fruits and Vegetables	\$85,000	\$27,500	32.3%
Plastics Packaging Materials and Un-laminated Films and Sheets	\$81,500	\$7,400	9.1%
Plastic Bottles	\$81,200	\$4,000	4.9%
Flour and Malt	\$70,400	\$1,200	1.7%
Other Animal Food	\$70,000	\$54,600	78.1%
Natural Gas and Distribution Services	\$68,300	\$24,800	36.3%
Vegetables and Melons	\$63,000	\$16,300	25.8%
All Other Crop Farming Products	\$61,200	\$15,900	26.0%
Advertising and Related Services	\$55,600	\$37,800	68.0%
Rail Transportation Services	\$48,300	\$18,100	37.4%
Other Plastics Products	\$47,000	\$8,600	18.3%
Real Estate Buying and Selling, Leasing, Managing and Related	\$46,600	\$34,000	72.9%
Glass Containers	\$42,200	\$0	0.0%
Monetary Authorities and Depository Credit Intermediation	\$39,500	\$34,200	86.6%
Maintained and Repaired Nonresidential Structures	\$39,000	\$35,900	92.0%
Non-Comparable Foreign Imports	\$36,700	\$11,300	30.8%
All Other Manufactured Food Products	\$36,100	\$4,400	12.2%
Medicines and Botanicals	\$33,500	\$300	0.8%
Processed Poultry and Meat Products	\$32,100	\$1,600	5.1%
All Other Paper Bag and Coated and Treated Paper	\$31,200	\$5,900	18.9%
Totals	\$6,572,900	\$3,623,100	55.1%

Source: IMPLAN 2011 via UW Extension Center for Community and Economic Development

How Firms Are Connected to Each Other: The primary delivery mechanism for moving raw materials and finished goods in and out of the region is currently trucking, representing over 97 percent of inbound and 93 percent of outbound food shipments in the region (see Table 2.3 below).

Table 2.3: Food Products Originating and Terminating in the Region, 2012

Mode	Origination (tons)	Percent	Termination (tons)	Percent
Truck	5,124,788	96.7%	3,377,998	93.3%
Rail	163,940	3.1%	243,888	6.7%
Water	10,250	0.2%	0	0.0%
Air	30	0.0%	34	0.0%
Other	582	0.0%	0	0.0%
Totals	5,299,590	100.0%	3,621,920	100.0%

Source: 2012 Transearch Commodity Flow Data via Wisconsin Department of Transportation

Food currently moves west to east through longer mainstream supply chains that converge in and around Chicago. Analysis of food flows identify nine network nodes that exist across the nation including “Chicago-Naperville-Michigan City” and “Remainder of Wisconsin.” The prominence of these nodes in the supply chain network means any disruption of service or removal of any node has negative impacts on the movement of food throughout the nation.¹⁴ As these nodes are being stressed due to increasing traffic congestion and rising fuel prices, industry leaders and supply chain theorists are beginning to push for the development of shortened supply chains centered on regional aggregation facilities or food hubs, as well as the incorporation of other forms of transport, including rail, for moving products to market. Streamlining logistics is also critical to this process, and two of the projects proposed by MadREP and its partners will focus on studying the feasibility of forming a trucking-logistics cooperative in the region and making improvements to the region’s rail infrastructure. Other projects profiled in the infrastructure section of the application will focus on the development of two regional aggregation facilities.

The region excels in direct market supply chains representing a variety of strategies for local food distribution, including: local farmer’s markets, traditional farm stands, Community Supported Agriculture (CSA), buying clubs, institutional food markets, and home deliveries. These direct chains promote profitability as, on a per unit basis, direct market KTS producers and processors receive revenues that are

¹⁴ Xiaowen Lin, Qian Dang and Megan Konar, “A Network Analysis of Food Flows within the United States of America,” Environmental Science and Technology, 2014.

greater, often by a substantial percentage, than their mainstream counterparts.¹⁵ Direct chains are a primary mechanism that new producers and processors use to enter the market, again often at lower cost and higher initial profitability than trying to secure sales and pricing power through mainstream market channels.

How KTS Businesses Support Each Other: It is critical that KTS businesses are always seeking to improve connectivity, product and market intelligence gathering, and coordination along the supply chain. A key example of this need to constantly improve and innovate is provided by the state's dairy industry. The industry was in full decline during the early 2000's when milk production was predicted to fall from 24B pounds in 2001 to 16B pounds in 2015 primarily due to the consolidation and closing of cheese plants.¹⁶ Instead, a renaissance in artisan and specialty cheese making led to stability and renewed growth in all aspects of the supply chain from milk production to cheese processing. The industry recognized early the shifting market to specialty cheese, and began rapidly adapting based upon the following strategies: development of larger milking herds in order to increase output and lower production costs, development of a Master Cheesemaker certificate program, regulatory and tax reforms driven by trade associations and professional organizations, and financing programs for modernization driven by government agencies and agribusiness lenders.¹⁷ The result was that the total number of cows increased from 1.2M to 1.3M, and milk production increased to 27B pounds in 2013. This production is feeding commodity and specialty cheese plants that currently number 69 inside the region.¹⁸ Improvements were also made in the milk hauling system in order to increase the number of total load deliveries resulting in operating efficiencies that made the industry more competitive and profitable.

A second example of this type of supply chain coordination and innovation is provided by the \$40M (425,000 square foot) organic products distribution center developed by UNFI in Sturtevant, WI. Organic farming and product development have been so successful in the region that Organic Valley recently announced it reached \$1B in total top line sales, making it the largest organic farmer's cooperative in the world.¹⁹ UNFI has had so much success with its product distribution strategy, focused on 20,000 different organic and specialty products, that it decided to build a second similar sized facility in Prescott, WI (near Minneapolis). Even with this second facility, UNFI had difficulty keeping up with 2014 product demand in the region and state signaling the need for additional capacity in the market. UNFI's largest customer is Whole Foods Market (a major grocery asset in the region), and one of its primary suppliers is Organic Valley. The company chose to locate in Wisconsin due to the quality of the labor force and proximity to its primary markets.²⁰

MadREP and its partners are looking to replicate this type of success with other production and food processing assets in the region. A key target for this effort will be to position the region's KTS industry to take advantage of the growing trend toward local foods. Consumer awareness of and interest in food that is locally produced began to take hold in 2000 and has increased sharply in recent years.²¹ Federal and state policy makers are increasingly looking to local food projects to increase food security, as well as support small farmers and rural economies.²² The growth trend has resulted in a supply and demand imbalance in the marketplace. Producers and processors cannot currently generate enough production to satisfy the demand for local foods. In response to this demand, programming is currently being developed (similar to the dairy/organic examples) that will position local foods to become the next big growth segment for the region's KTS.

One of the keys to success in developing the local foods market segment to its full potential is to develop a cost effective system for tracing products from farm to consumer in regional (or intermediate) and mainstream supply chains. Traceability technology enhances the flow of information along supply chains. It provides a way to determine the path and timeliness of an agricultural product's movement through the supply chain, from production all the way to the consumer. Current technology uses mobile devices to scan quick response (QR) codes or radio frequency identification (RFID) tags for tracing products over the Internet. This technology improves inventory control and food safety as well as allows for enhanced customer knowledge of farmers and their products and the restoration of direct customer feedback in longer supply chains. The key question for regional supply chains is whether the benefits are significant enough to justify the expense. This is a matter of scale (the greater the product flow, the more likely a system will be cost effective), and cost of system implementation, which is moving in a downward trend over time.²³ The feasibility study that is proposed as part of this application for a trucking-logistics cooperative (see project 2.2) will also examine the issue of traceability and determine if a system can be cost effectively incorporated into the KTS supply chain.

Key Trade Associations and Roles They Play: Trade associations assist with market research and intelligence, product branding and promotion, regulatory and tax policy, operational best practices, plant and production modernization, and networking. The region is served by a large number of trade associations and non-profit organizations looking to advance the KTS industry (see Table 2.4).

Table 2.4: Trade Associations and Non-Profit Organizations Serving the Region

Specialty	Key Trade Associations and Non-Profits
Dairy	Wisconsin Milk Marketing Board; Dairy Council of Wisconsin; Professional Dairy Producers of Wisconsin; Wisconsin Dairy Artisan Network
Cheese	Wisconsin Cheese Makers Association; Wisconsin Specialty Cheese Institute; Foreign-Type Cheese Makers Association; Southwestern Wisconsin Dairy Goat Products Cooperative
Meat/Livestock	Wisconsin Angus Association; Wisconsin Association of Meat Processors; Wisconsin Beef Council; Wisconsin Bison Producers Association; Wisconsin Cattleman's Association; Wisconsin Livestock Breeders Association; Wisconsin Pork Producers Association; Wisconsin Poultry Improvement Association; Wisconsin Sheep Breeders Cooperative

¹⁵ USDA, Comparing the Structure, Size and Performance of Local and Mainstream Food Supply Chains, Economic Research Report Number 99, June 2010.

¹⁶ Wisconsin Department of Agriculture, Trade and Consumer Protection, Status of Wisconsin Agriculture, 2014.

¹⁷ *Ibid.*

¹⁸ Matt Kures, UW-Extension Community and Economic Development, Agriculture, Food and Beverage Industry Sector Report, October 2014.

¹⁹ Milwaukee Journal Sentinel, "Organic Valley says Sales up 8.5 Percent in 2013," Associated Press, April 4, 2014, <http://www.sacbee.com/2014/04/04/6295701/organic-valley-says-sales-up-85.html>.

²⁰ Milwaukee Journal Sentinel, "United Natural Foods to Open Distribution Center in Northwest Wisconsin," Associated Press, February 24, 2014, <http://www.jsonline.com/business/united-natural-foods-to-open-distribution-center-in-northwest-wisconsin-b9921249421-246917401.html>.

²¹ USDA, Comparing the Structure, Size and Performance of Local and Mainstream Food Supply Chains, Economic Research Report Number 99, June 2010.

²² *Ibid.*

²³ National Center for Freight & Infrastructure Research & Education (CFIRE), Achieving Scale Strategically: Understanding Freight Flows in Regional Food Supply Chains, Report 07-17, June 2013.

Crops/Specialty	Wisconsin Apple Growers Association; Wisconsin Aquaculture Association; Wisconsin Berry Growers Association; Wisconsin Brewers Guild; Wisconsin Cherry Growers; Wisconsin Corn Growers Association; Wisconsin Cranberry Board; Wisconsin Farm Bureau Federation; Wisconsin Fresh Market Vegetable Growers Association; Wisconsin Grape Growers Association; Wisconsin Potato & Vegetable Growers Association; Wisconsin Soybean Association; Wisconsin Winery Association
Other	Wisconsin Grocers Association; Wisconsin Restaurant Association; World Dairy Expo; World Beef Expo; Wisconsin Biotechnology Association; Midwest Equipment Dealers Association; Midwest Food Processors Association; Madison Area CSA Coalition; Midwest Organic Dairy Producers; Cooperative Network; The Cornucopia Institute; Organic Processing Institute

Source: Wisconsin Department of Agriculture, Trade & Consumer Protection

KTS Products That Have Recently Launched: This network of trade associations and non-profit organizations can also assist with the coordination of research and new product development. New products or processes that recently launched in the region include: Yum Butter, RP's Pasta, Bos Meadery, Ale Asylum, MobCraft Brewing, Innovation Kitchens, LLC (small batch co-packing and distribution), specialty cheeses, organic yogurt and butter, gluten free confections, whey lactose, nutraceutical and pharmaceutical products. Several of these products were developed at kitchen incubator facilities (of which there are currently ten in the region) which excel at promoting innovation in local foods, including: jams, jellies, breads, condiments, confections, value-added meats, and processed fruits and vegetables. MadREP will keep working to develop and promote these assets, as well as coordinate efforts with our regional research institutions (i.e., CDR) to continue these product development efforts.

Current Institutions: The region has access to a large number of trade associations and non-profits (see previous table) seeking to advance the industry in the marketplace. The region also has access to research facilities at UW-Madison and four local technical colleges (Madison College, Blackhawk Technical College, Southwest Technical College, and Moraine Park Technical College). All of these entities have contributed to the successes documented previously in the dairy and organic industry segments over the last 20 years.

Gaps: Based upon this analysis of the supply chain, MadREP and its partners have identified the following two major gaps in the KTS supply chain. Both represent immediate and longer-term challenges that must be addressed if KTS businesses are going to continue to prosper and grow.

1. Continued promotion of vertical coordination and business synergies between supply segments in an effort to reduce the cost of obtaining inputs and delivering our products to market.
2. Development of projects which shorten the supply chain for local foods and increase cost efficiencies in moving raw materials and finished goods throughout the supply chain.

Plans: MadREP and its partners have identified seven primary projects to help address these supply chain gaps.

2.1 MadREP: SourceMap:²⁴ Work with Supply Chain Visions to develop a regional supply chain or value system map. Use a proprietary crowd sourced software system to geographically map the supply chain. Use the mapping to identify gaps and disconnects in the supply chain in order to identify recruitment and/or matchmaking opportunities that will shorten existing chains adding operational efficiencies to the industry.

2.2 CIAS: Trucking-Logistics Cooperative: Complete a feasibility study of developing a trucking and logistics cooperative designed to reduce less than full truck load (LTL) deliveries in the KTS supply chain. As part of the study explore technologies available to maintain product transparency in the supply chain. The goal of the cooperative will be to maximize profits while potentially easing congestion, reducing GHG emissions, improving driver working conditions and improving customer access to local foods.

2.3 Intermodal Rail Feasibility Study: Work with local rail and trucking companies, as well as staff from the Wisconsin Department of Transportation (WisDOT), to study the feasibility of developing an intermodal rail facility that can serve KTS businesses in the region. The study will focus on determining the ideal size and location for the facility that would allow for the aggregation of demand across all KTS manufacturing sectors with primary emphasis on facilitating the movement of raw materials and finished goods from our region to the US coasts.

2.4 CFIRE: Transportation Packaging System: Research and develop a new durable light weight shipping container made of fiber base panel structures that will reduce distribution costs for bulk materials and ease the transfer of materials between transportation modes in a multi-model system.

Related Infrastructure Projects

The following three projects are also identified and profiled under the infrastructure section of the application, but have major operational impacts on the KTS supply chain in the region. **4.1 Innovation Kitchens Expansion (IQF)** **4.3 Garver Feed Mill: 2nd Stage Company Center and AgriTourism** **4.4 Madison Public Market**

3. 0 Research and Innovation

Current Capabilities: The capacity and clout of the UW System's flagship campus of UW-Madison is most distinctive in the realm of research and development, exhibited by over \$1.1 billion in research spending in 2013, and its consistent ranking as a top research institution nationally and beyond. Ranking in the top five for overall research expenditures for more than 20 years, the university ranked 2nd among public

²⁴ SourceMap is a cloud-based tool developed at MIT, which allows for crowd-sourced collection of industry-wide supply chain data (SourceMap, <http://sourcemap.com/>).

institutions nationally and 19th globally in 2013.²⁵ The university's KTS related research assets include those within the College of Agriculture and Life Sciences (CALS) in the departments of Agricultural and Applied Economic, Animal Sciences, Dairy Science, Food Science, and Horticulture; the CDR; the Food Research Institute (FRI) and its Applied Food Safety Laboratory (AFSL); the Center for Integrated Agricultural Systems (CIAS); the Materials Research Science and Engineering Center; and the Sea Grant Institute. Key research and innovation that has had a direct impact on the KTS and the region includes:

1. Development of the Wisconsin Master Cheesemaker certificate - the only program offered in the U.S. This program now encompasses 55 Master Cheesemakers and more than 600 kinds of cheeses that account for 22 percent of the state's total cheese production. Production of specialty cheese totaled a record 611 million pounds in 2012, up six percent from 2011.²⁶
2. Developments in cow genetics, reproductive management, nutrition and facilities advancements that have allowed average yearly milk production to climb 57 percent from 14,000 pounds per cow in 1989 to nearly 22,000 pounds per cow in 2012.²⁷
3. Implementation of the Wisconsin Integrated Systems Trial Project (WICST), which is one of the nation's longest running systems trials for organic crop management, focused on diverse rotation, minimal applications of fertilizers, pesticides, and other "low input" farming practices.²⁸
4. Numerous innovations have been developed at the AFSL, which conducts industry leading food safety research centered on foodborne bacteria, molds, protozoa and viruses. Key successes have occurred in the areas of microbial and toxin detection systems, pre-harvest and post-harvest intervention strategies, and the mitigation of diet-related diseases.²⁹

The UW-Madison's twelve Agricultural Research Stations (ARS) throughout the state are headquartered in Arlington, Wisconsin ARS -- a 2,000+ acre station supporting a wide cross section of research. The Lancaster ARS is located in Grant County, where research emphasis is on environmentally sound agricultural systems. The O.J. Noer ARS is located near Verona, where research is dedicated to the testing, development, and promotion of turfgrass. The West Madison ARS provides research and instruction experiences, and is developing into a recognized center of urban agriculture. The vision of the USDA's Agriculture Research Service is to "lead America towards a better future through agricultural research and information."³⁰ USDA's agriculture research presence in the region includes over 100 staff and physical locations at the U.S. Dairy Forage Research Center (USDFRC) located in Madison, and the USDFRC Farm located in Prairie du Sac. The USDFRC Farm operates jointly with CALS and its ARS program.

WARF is a private, nonprofit patent and licensing organization for the UW-Madison that works with business and industry to transform university research into real products. In 2013, WARF ranked sixth among the world's universities in patents obtained for new technologies with 160 patents.³¹ UW-Madison ranks #4 in worldwide universities receiving the most U.S. utility patents,³² with 3.7 million square feet in research facilities and lab space. WARF currently holds 210 or 8% of its portfolio of new inventions and patents directly relevant to agriculture and food & supplements.³³ More than 20 percent of inventions and patents in additional categories contribute to the innovation and efficiencies occurring in the KTS including, but not limited to, veterinary (for livestock and dairy), materials and chemicals (for packaging), and clean technology (for alternative energy sources and waste management).

The region fosters the development of startup and small companies through its numerous shared facilities, incubator spaces, and research centers. Table 3.2 provides a list and short description of these resources. While several are specific to the KTS, others have the capacity to work or impact the KTS.

Table 3.2: Shared Facilities, Incubator Space, and Research Centers

Name	Description
100State	Provides co-working space, mentorship to support entrepreneurial endeavors to help the community flourish
Center for Dairy Research (CDR)	The TURBO program at CDR is an innovation accelerator for companies developing products containing dairy related ingredients
Farley Center Farm Incubator	With a mission to expand small farmers' growing capacity, aspiring farmers are supported with land, tools, education, and marketing assistance
Food Enterprise and Economic Development	Supports local food entrepreneurs and development of food-related employment by providing commercial kitchen spaces for food processing
Food Enterprise Center	Multi-tenant aggregation, storage, processing and distribution center for area producers and food industry
Gener8tor	Invests in community, capital, expertise, mentorship and network in early-stage entrepreneurs with innovative business models
Janesville Innovation Center	The center provides infrastructure, education, training, mentorship, and a network of service providers to assist entrepreneurs to achieve success by encouraging technical innovation
Kickapoo Culinary Center	Food business incubator provides clients with affordable access to a world-class kitchen, coaching, and counseling on business formation and development
Madison Enterprise Center	Office/light industrial business incubator, providing business assistance and resource-matching services
Main Street Industries	Office and light industrial business incubator, providing business assistance and resource-matching services
Portage Enterprise Center	32,000 square-foot business incubator with support for tenants including access to capital and business assistance

²⁵ Academic Ranking of World Universities (ARWU), 2013, Center for World-Class Universities (CWCU) of Shanghai Jiao Tong University, <http://www.shanghaieranking.com/ARWU2013.html>

²⁶ University of Wisconsin, College of Letters and Science, Grow Magazine, 125 Year Anniversary Report, CALS website, <http://grow.cals.wisc.edu/communities/12-in-125>.

²⁷ Ibid.

²⁸ Ibid.

²⁹ UW-Madison Food Research Institute website, <https://fri.wisc.edu/index.php>.

³⁰ USDA, Agriculture Research Service, <http://www.ars.usda.gov/AboutUs/AboutUs.htm>

³¹ National Academy of Inventors and the Intellectual Property Owners Association, 2013.

³² National Academy of Inventors, 2012.

³³ Wisconsin Alumni Research Foundation, <http://www.warf.org/technologies/inventions-patents-and-portfolios.cmsx> (Accessed March 16, 2015).

StartingBlock Madison and Sector67	50,000 SF Innovation and collaborative space for entrepreneurs and innovators. Sector67 is a makerspace, dedicated to providing an environment to learn, teach, work-on, build, and create next generation technology. It will be connected to the proposed Madison Culinary and Technology Center
Sharing Spaces Kitchen	Shared-use incubator kitchen with co-packing services, home to local food processing and storage for area growers and buyers, as well as programs and education for market farmers and food entrepreneurs
University Research Park (URP)	Home to more than 126 companies, internationally recognized research and technology park supporting early-stage, growth oriented businesses across multiple facilities: MGE Innovation Center, URP Accelerator, Metro Innovation Center
Whitewater Innovation	Created with entrepreneurs in mind, has everything a business needs to grow and succeed
Whitewater Makerspace	A collaborative, affordable, and inspirational educational environment to access old and new skills, cross-pollinate ideas, and innovate
Wisconsin Innovation Kitchen	State inspected commercial kitchen and licensed food processing facility owned by a center supporting people with disabilities, focusing on helping existing small food businesses create jobs and grow their businesses by offering preparation, packaging, and labeling services

Source: Madison Region Economic Partnership

In Wisconsin, young firms on average employ less than eight employees, and can serve as a proxy for entrepreneurship on the regional level. From 2003-2012, establishments with 1-9 employees in the region experienced a decline of 1 percent.³⁴ According to the 2012 Business Dynamics Statistics, Wisconsin's business start-up rate was third lowest among the states, but survival rates of business establishments were well above the national average. As a response to the challenge of lagging business creation, there has been a heightened demand for developing the entrepreneurial ecosystem, which has spurred the development of a strong infrastructure to help small businesses and startups in the region, including recently created partnerships with UW-Madison: Discovery to Product (D2P) and the Advocacy Consortium for Entrepreneurs (ACE). Highlighted below are some of the community's resources for small business and startup development, and their records for helping business and entrepreneurs.

- Office of Corporation Relations (OCR): Part of the task of UW-Madison's Office of Corporate Relations (OCR) is to assist in sponsoring research, licensing technology, and starting new businesses. In FY2013, OCR handled approximately 800 requests for assistance from 436 unique companies, made more than 1,260 referrals to campus and off-campus partners, and directly managed an additional 250 requests.³⁵
- Qualified New Business Venture (QNBV) Program: A state level program of the Wisconsin Economic Development Corporation (WEDC), QNBV spurs investment in early stage businesses and provides tax credits equal to 25 percent of equity investment. Of the 204 businesses designated as QNBV's in the state, 149, or seventy-three percent, originate from the region.
- UW-Madison Small Business Development Center (SBDC): Serves as a resource for small and emerging mid-size companies in South Central Wisconsin. In 2014, SBDC assisted 272 clients, helped 13 new businesses get started, and saw 102 new jobs created by client businesses.
- Wisconsin Women's Business Initiative Corporation (WWBIC): A leading innovative statewide economic development corporation and community development financial institution (CDFI), WWBIC works with startups and growing businesses. Since its inception in 1987, it has started, strengthened or expanded 3,500 businesses and created 8,300 jobs.³⁶ In 2013, 28 percent of businesses in its loan portfolio were in food related services and manufacturing.
- Madison Entrepreneur Resource, Learning and Innovation Network (MERLIN): Madison, WI-based corps of volunteers who guide emerging entrepreneurs in early stage ventures. Three of the 35 businesses currently receiving mentorship through the MERLIN mentor program are KTS related companies, and of the 50 businesses that have graduated from MERLIN, 12 have been food or beverage companies to date.

In addition, the Madison chapter of SCORE is dedicated to entrepreneur education and the formation, growth and success of small businesses. Specific to the KTS, FEED Kitchens, the Food Enterprise Center, Kickapoo Culinary Center, Madison Enterprise Center, Sharing Spaces Kitchen, and the Wisconsin Innovation Kitchen support local food entrepreneurs and the development of food related employment by providing office or commercial kitchen space along with shared business services that cut operation costs for start-ups and expanding businesses.

Current Institutions for Improving Capability: Research and commercialization coming out of the university and its many research centers are highly relevant to the KTS. The CDR's TURBO program is an innovation accelerator for companies developing products containing dairy related ingredients. The AFSL of the Food Research Institute is a leader in identifying and resolving food safety issues to meet community, government and industry needs. The outreach and training programs of the CIAS help farmers, educators, crop consultant, businesses and consumers put its research findings to work in the agriculture industry.

In addition to the region's many shared facilities, incubator spaces, and research centers previously profiled that support the KTS, WARF and the UW-Extension's Center for Technology Commercialization (CTC) work with new and existing firms to help promote innovation. WARF supports research and innovation by protecting discoveries and licensing them to commercial partners for beneficial use in the real world, and is best known for commercializing groundbreaking vitamin D therapies and its patents for human embryonic stem cells. WARF manages a \$2 billion endowment, and by returning proceeds to the university, fuels a continuous cycle of investment, research, and innovation.³⁷ The CTC supports bringing innovation to market through one-on-one assistance to early stage emerging technology businesses in Wisconsin, including assistance with funding acquisition through federal Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) programs.

³⁴ U.S. Census Bureau, County Business Patterns.

³⁵ Campus Innovation Report, 2013.

³⁶ Wisconsin Women's Business Initiative Corporation, https://www.wwbic.com/content/content/files/WWBIC_Impact_2014%281%29.pdf.

³⁷ Wisconsin Alumni Research Foundation, <http://www.warf.org/>.

Gaps: Regionally, there is a strong support infrastructure for dairy-related innovation and businesses. Continuing to support the expanding demand for dairy and dairy related products, as well as expanding the support infrastructure to non-dairy food related businesses, such as non-dairy food products and the growing fermented beverages industry, will allow the region to expand its market and unleash the potential in the region's entire KTS.

A white paper recently published by the Kauffman Foundation titled *AgTech: Challenges and Opportunities for Sustainable Growth* sheds light on the projected growth in the world's population, which will lead to a 70 percent increase demand for food by 2050. The solutions to address the expected food and water shortages lie in the development and application of agricultural technology, which is currently not broadly available within the agricultural community and needs to be developed through the whole continuum of existing educational institutions.³⁸

Plans:

3.1 CDR: Babcock Dairy Plant Expansion: Renovate and expand the Babcock Dairy Plant to transform it into a world-class, state-of-the-art facility. Over 27,000 square feet will be added to the existing space, to house \$5.5 million in new equipment.

3.2 Farm to Glass: Outreach for Fermented Beverages: To grow demand for Wisconsin's fermented beverage industry by improving the quality of its ingredients and products. This would be accomplished by engaging a UW-Madison Outreach Specialist in research, education, and outreach to specialty crop growers and fermenters. This project would be a first step in developing a comprehensive fermented beverage program of research, outreach, and education at UW-Madison to support the fermented beverage industry.

3.3 Water Resource Monitoring Group: Develop a new edge of field water monitoring technology that works remotely with lower installation and on-going maintenance costs, to primarily serve municipal storm water management officials, researchers and agricultural producers. The project responds to new water quality regulations that require enhanced monitoring techniques and higher quality data to predict and enforce the new standards. The potential benefit to the AFB industry will be in managing and mapping field productivity in order to enhance crop yields and overall productivity.

4. 0 Infrastructure/Site Development

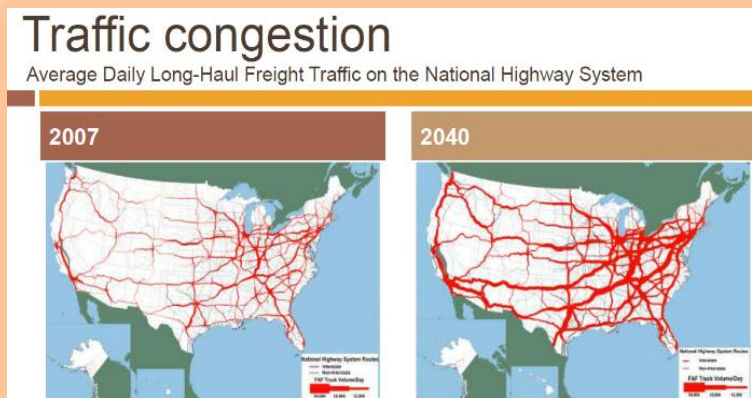
Current Capacity

The infrastructure and site development ecosystem serving the KTS is comprised of a) governmental and educational organizations and research and development facilities, exposition facilities, port authorities, local KTS support organizations, and private rail, trucking and shipping companies, b) physical public infrastructure facilities including highways, local and national rail lines, and commercial ports, c) public sector tools tied to Foreign Trade Zones, customs and regulatory controls, d) privately held public storage and warehousing facilities, and third party logistics operators, and e) key industrial parks, private production and processing facilities, and co-packing facilities and kitchen incubators. It is important to differentiate that the infrastructure and site development ecosystem varies greatly in the KTS as systems supporting local and sustainable food markets are quite differently organized and run than that of the conventional agriculture, and large scale food and beverage manufacturing. This proposal addresses both KTS markets.



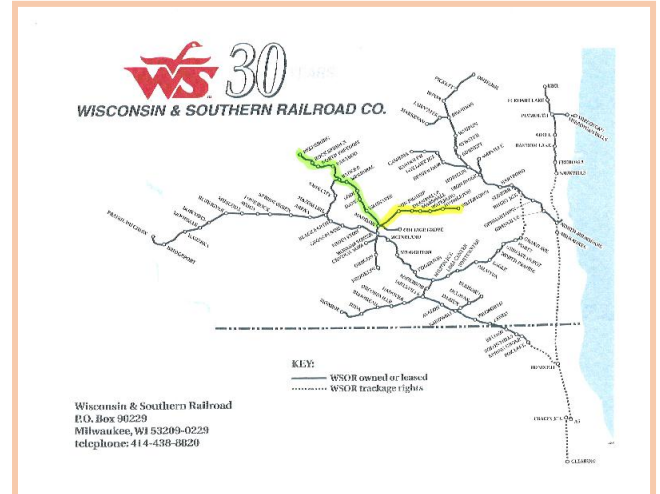
Highway, Port and Rail KTS Infrastructure inside the Region: The majority of the 14-county region is well served by an extensive four to six lane Interstate (I-90/94/39/43) and US (151) highway infrastructure system connecting the region to the major metropolitan areas and markets of Chicago, Milwaukee, Minneapolis, Green Bay, Rockford, Dubuque and Des Moines (see regional map on the next page). Milwaukee is both the region and state's major shipping port roughly 75 miles east of Madison. The Milwaukee Port is situated at the intersection of both Union Pacific and Canadian Pacific rail lines and I-94, is accessed to the east via the Great Lakes/St. Lawrence Seaway, has been designated as FTZ #41, and is the third largest grain exporter in the Great Lakes Region. The Wisconsin & Southern Railroad (WSOR, a division of WATCO) is based in the City of Madison and operates all the local freight rail lines serving the 14-county region (see WSOR rail graphic). WSOR connections to the intercontinental freight lines take place in Milwaukee and Chicago. There are two other major ports serving our region located in Prairie du Chien and LaCrosse, WI with access to the Mississippi River.

Global KTS Freight and Rail: Multinational KTS corporations are in the region because of key KTS assets for their production processes. They operate their own systems, processes, major R&D, supply chain, and production facilities internally. Most KTS firms have long ago assessed and integrated into the Midwest and National existing infrastructure systems. For the most part, they maximize profitability for their operations by scaling up or down based upon market fluctuations and corporate direction. Physical infrastructure are constantly monitored, but capacity has historically not changed quickly in Wisconsin, and thus rarely impacts their decision making. This situation has recently begun to change as margins



decrease, business growth is global, and companies analyze triple bottom line impacts of logistics and freight decisions. If our region does not continue to react quickly, we could lose these assets

Key strategic investments in the last six months by WisDOT were the State's purchase of "Pink Lady" Line between Reedsburg and Madison from UP for \$40 million (highlighted in green on the map) and awarding \$6 million to contractors for rail line improvements between Madison and Watertown (highlighted in yellow on the map). The Pink Lady line serves six major food manufacturing enterprises and is the closest rail access to Organic Valley in Vernon and Monroe Counties. Watertown, situated halfway between Milwaukee and Madison also has a large agglomeration of food related businesses. WisDOT is doing its part in partnership with our region's short-line operator, WSOR (WATCO), but better integration of this short line improvement program into the federal rail ecosystem improvements that serve KTS firms inside our region is drastically needed. In the last year of research for this effort, there has not be one food or beverage manufacturer interviewed that does not desire to either explore, start or expand their distribution channels via rail. Large quantities of food products move in and out of the region. The destination for our region's "domestic exports" include other parts of Wisconsin, the rest of the country or foreign markets. According to the Wisconsin Department of Transportation's (WisDOT) 2011 Transearch Commodity Flow Data, food products originating inside the region in 2011 totaled 4.34M tons with a value of \$10.66B. Conversely, food products terminating inside the region in 2011 totaled 4.35M tons with a value of \$9.27B. The top six domestic exports are distilled and blended liquors, prepared or canned meat, processed milk, canned fruits and vegetables, miscellaneous food preparations, flour and other grain mills, and cheese and special dairy products. Trucking distributes 95.3% of outbound product from the region while rail distributes 4.3%. Less than 1% of food products leave the region via ship/water. 95.8% of inbound food product arrives by truck and 4.2% arrives via rail. According to the Center for Transportation Analysis at the Oak Ridge National Lab (FAF-#3), 63% of agricultural exports from Wisconsin heading to Asia in 2007 arrived in the Los Angeles port via truck. That figure was 64% in 2011.



Currently, there are no inter- or trans-modal facilities in the region and KTS products are once again predominantly trucked out of state for foreign markets. Highway tractor trailer traffic continues to increase consistently (see traffic congestion projection graphic), over-the-road drivers are aging and wages are stagnant, express continental rail traffic is dominated nationally by major corporations, and trucking costs continue to rise³⁹ There is strong interest for trans modal facility investments throughout the region with Watertown (Jefferson County), Reedsburg (Sauk County), Janesville (Rock County), and Cassville (Grant County) having the strongest rail assets to investigate.

Local Small Batch Food KTS Processing Facilities: Table 3.2 has a list of shared use kitchens, food incubators, co-packing facilities, and food related R&D centers in the 14-county region serving the local and sustainable food market. These comprise 40% of all like facilities in the state.⁴⁰ Wisconsin Innovation Kitchen--WNK (Iowa County) is nationally recognized, and the largest small-batch co-packing facility in the state. Operationally, WINK and the SW Opportunity Center (SOC) in Lancaster are also a major employment centers for dislocated workers and adults with disabilities. Profiling the KTS local food supply chain, analyzing and implementing a trucking logistics cooperative, and linking existing facilities (Wisconsin Innovation Kitchen, FEED Kitchen, Vernon County Food Center, Kickapoo Culinary Center, Sharing Space Kitchen, and Farley Center Farm Incubator) to the proposed Madison Public Market District (MPM)/Wisconsin Food Hub food processing, storage and aggregation facility are major interwoven gaps in creating an efficient local KTS ecosystem. The FEED Kitchen needs additional equipment to accommodate meat processing and bottling needs. Vernon County needs operational support to accommodate the growth of their current and future tenants as they are over 50% occupied in their 100,000 SF facility. WINK needs an expanded facility that includes cold, dry and freezer storage both on site and in between their facility and the Driftless region producers. In SW Wisconsin, there are no commercial greenhouse facilities to meet the tri-state region's market needs. SOC has secured \$900,000 financing to construct these new facilities in Lancaster needs extra capital for construction of a better head house and one new full time employee to help with operations.

KTS Processing and Manufacturing Sites: Due to the mostly rural nature outside of Dane and Rock counties, KTS producers (growers) and processors are scattered throughout very rural small cities and villages. Each community of size has a dairy processing facility or an industrial park with one or more food processors. Dane, Jefferson, Rock, Columbia, Green, and Sauk are the strongest counties in the region for value added food manufacturing based on food tonnage commodity flow data.⁴¹ Dane and Rock County are also the home to Kraft Foods (Oscar Mayer), Kerry Food Ingredients, Hormel, among many others SMEs. These counties are also proximate to the Interstate and bisected by WSOR rail lines. Green, Grant, Lafayette and Vernon (Organic Valley) counties are the strongest counties for value-added agriculture dairy processing and manufacturing assets (Foremost Farms), but have very limited rail access serving the KTS.

KTS Storage/Aggregation: The majority of major food processors (i.e. members of the Midwest Food Processing Association) throughout the region have their own dry storage facilities, utilize several privately managed cold storage facilities in Jefferson, Rock and Dane counties and either have internal logistics teams or preferred contract truckers and 3PLs for storage and distribution. There is no central aggregation coordination or intermodal facility serving the entire conventional large food processing market for the KTS. The Wisconsin Food Hub, a local cooperative serving institutional food markets throughout the region, owns a warehouse in the City of Waupaca, located just north of the region. The Food Hub is looking for a permanent warehouse solution in Dane County. Food security/safety, proximity to markets, and custody of product are major driving forces in logistics planning, and is a major concern as the local and sustainable food markets of the KTS grow further. A profile of the local distribution companies is outlined in the supply chain section of this document. Vernon County is exceptionally unique as it is the home to CROPP (brand: Organic Valley), the largest farmers owned Dairy Cooperative in the United States. Their main

³⁹ American Trucking Association, WisDOT 2012 Transportation Policy Commission

⁴⁰ Wisconsin Food Innovation Facility Analysis, Greg Lawless, UW Extension Study 2013

⁴¹ Wisconsin Department of Transportation (WisDOT): Transportation Finance and Policy Commission 2012

distribution hub is located in Cashton, WI (Monroe County) and is currently expanding. This facility carries and distributes their entire 22,000 SKUs, the only distribution facility in their nation-wide system to do so.

Current Institutions

Organizational Infrastructure: The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) provides the KTS regulatory and inspection systems for sites and facilities where KTS product is produced, processed, stored and distributed. Milwaukee Port Authority is the primary United States Customs site for KTS product leaving via ship from Wisconsin. The Dane County Airport Foreign Trade Zone has available custom services used on an as-needed basis. There are dozens of organizations that provide both production and processing technical assistance as well as private transportation services. These entities are outlined in earlier sections as well as profiled in the letters of support section.

Foreign Trade Zones: The Dane County Regional Airport (MSN) created a Foreign Trade Zone (FTZ) in 2006. This is an underutilized asset and is relatively unimportant to this KTS given that alcohol production is not FTZ eligible and food is not generally imported for value added production and ship backed to its originating nation.

Educational Institutions: The UW-Madison, CALS, the four USDA funded federal laboratories, and their 12 agricultural research stations throughout the region and state are major research facilities important to the production infrastructure for the KTS. All four technical colleges outlined earlier under Workforce Development and Training are key elements of the infrastructure and career programming. Facilities for all these institutions must be state-of-the-art and curriculums must be current to keep the KTS ecosystem strong.

Gaps:

State Context to Domestic and International Exports: In February of 2012, the Wisconsin Department of Transportation (WisDOT) published its 10-year funding plan to address aging infrastructure, growing demand, capacity constraints, and maintenance and operation levels, with a vision toward multimodal integration. Freight Policy Issue Papers were published later in 2012 on best practice multimodal approaches to freight, coordination throughout the Midwest, and the adequacy of funding. WisDOT, Wisconsin Manufacturers and Commerce (WMC) and their partners are currently developing a statewide freight planning and a Multimodal Freight Network that is commodity based and will benefit the KTS. Freight-flow restrictions, key connections for both rural farm-to-market and urban plant-to-freight routes, and collective mode analysis of impacts and connections are part of this state wide planning process. Global market opportunities (i.e., economic impact analysis of exports, freight velocity, perishable product delivery times, cross market collaborations, and public-private partnership) are a major driver for WisDOT freight planning. The WisDOT Policy Issue #4 published in 2012 recommends that we perform a feasibility study for a truck/rail transloading facility with refrigerated equipment and storage for agricultural products (see table 7.1). Also identified as major needs are return flow refrigerated containers, box cars, and truck trailer partnership or equipment exchange programs.

Within the region, WisDOT has three major freight rail funding initiatives. WisDOT has purchased the Reedsburg to Madison rail line from Union Pacific (UP) for \$40MM, including repairs to the bridge crossing of the Wisconsin River at the City of Merrimac. This facility will be leased to WSOR and major investments will be implemented for spurs and switching, as well as an estimated \$5MM for bridge improvements for the river crossing. Priority #2 is a \$6 million upgrade/improvements to the rail line running between the City of Watertown (Jefferson County) and the City of Madison (Dane County). Rail lines and bridges will be made with this funding to allow for heavier car loads and operational speeds of 25 miles per hour, improving the ability of railroads to operate efficiently on state-owned facilities and increase global competitiveness. The City of Watertown, once Priority #2 rail improvements are constructed in 2015, is poised to develop a 200 acre rail-served industrial park to complement their current KTS sector industrial base and capitalize on this new rail investment serving their community. The third rail priority for both WSOR and WisDOT in the region is the rail line between the City of Madison and the City of Prairie du Chien (Grant County) that will serve the Cassville trans modal project (see table 7.1). Both the Reedsburg and Watertown to Madison lines currently operate at speeds less than 10 miles per hour and have bridges that cannot handle heavier carloads. WisDOT has budgeted \$736MM for freight rail improvements in Wisconsin for the next ten years. KTS trucking for national and global distribution of product contributes to air pollution and is not a long term sustainable option. See traffic congestion forecast graphic above.

Local KTS Distribution: The infrastructure ecosystem for small, local KTS manufacturers is extremely resource constrained and constantly evolving due to the newness dynamics of this market and its unique supply chain. There are 14 regionally-based and two Chicago and Milwaukee based distribution companies serving the local food market. The Chicago (\$917 million) and Milwaukee (\$497 million) distributors are trading their local KTS products from our region (Metro Freight Research Series, Brookings Institute, 2013) and serving their Metropolitan Statistical Area's (MSA's) local restaurant and institutional food buyers. There is no triple bottom line coordination or analyses for energy, sustainability and financial efficiency in this distribution system.

Local KTS Food Production, Processing, Packaging, Warehousing, Retail and Wholesale Infrastructure: The City of Madison desires to build the *Madison Public Market (MPM)* to support regional agriculture, grow new food-related businesses, increase food access for underserved residents, and build on existing assets in the city and throughout the region. MPM would serve physically as a retail, wholesale, processing, and storage facility to serve the local food industry sector. The *Wisconsin Innovation Kitchen (WINK)* needs an additional 30-40,000 SF for increased intake, logistics, processing, dry, and cold and freezer storage to accommodate large and small co-packing clients. The *FEED Kitchen Incubator* needs to purchase new equipment to expand operational capabilities to create a fully equipped meat kitchen with product packaging equipment. Dane County and UW-Extension desire to create a *Dane County Demonstration Farm* that develops, demonstrates and teaches production techniques and business management skills to help new and experienced growers build sound farm businesses that fill gaps in the current supply of local foods, Institutional foods buyers, and the regional restaurant market between Chicago and Minneapolis. The *Food Enterprise Center of the Viroqua Economic Development Association (VEDA)* seeks operational support to help pay for staffing to provide facility management and on-site technical assistance for KTS start-up businesses in an existing EDA-funded 100,000 SF food-based incubator and commercial kitchen. There is no food technology center in Wisconsin nor the Midwest that provides energy efficiency, food manufacturing and food processing education, training and technical assistance to food preparers or the food manufacturing industry. All proposed gaps outlined above would benefit greatly from this food technology center programming.

Projects

The following is a profile of projects that are locally driven by KTS businesses, state agencies, and economic development organizations. They are not seen as recruitment strategies, but rather asset based economic development investments. All projects are driven to improve productivity, sustainability, and financial return on investment. Job creation will result from every one of these projects through increases in productivity and profits. Projects are also outlined in the IMCP program summary chart (see Table 7.1).

Key Sites or Facilities Improvements to Local Food

- 4.1 *Wisconsin Innovation Kitchen (WINK)*: WINK is an existing Food and Drug Administration (FDA) certified co-packing facility in Mineral Point, WI that will expand an additional 30-40,000 SF for increased intake, logistics, processing, dry, cold and freezer storage to accommodate large and small co-packing clients.
- 4.2 *FEED*: This existing kitchen incubator will purchase new equipment to expand operational capabilities to create a fully equipped meat kitchen with product packaging equipment.
- 4.3 *Garver Feed Mill 2nd Stage Company Production and Agri-Tourism Development*: The Garver Feed Mill will create a highly functional and efficient production space suited for wholesale that specializes in craft and artisanal food products. Primary tenants will be 2nd stage companies. 62,000 SF total. It will be surrounded by orchards and vineyards on adjacent 21 acres.
- 4.4 *Madison Public Market (MPM)*: The City of Madison will build MPM to support regional agriculture, grow new food-related businesses, increase food access for underserved residents, and build on existing assets in the city and throughout the region. MPM will serve physically as a retail, wholesale, processing, and storage facility to serve the local food industry sector.
- 4.5 *Madison Culinary and Technical Center*: Johnny Hunter (Underground Food Collective), Tory Miller (Deja Foods and Beard Award Winner) and Matt Feifarek (Slow Foods Madison) have teamed up to create an Education and Job Training Farm to Table Culinary program coupled with a Culinary Technology Center that connects with Sector67 inside StartingBlock Madison. Minorities will be targeted for students. Members/students will have the opportunity to learn Farm to Table culinary skills and build, collaborate, learn and teach about next generation culinary devices. This will include food safety training, health department licensing consultation, incubation for new businesses, and expert consulting. 6,400 SF facility.
- 4.6 *SOC Greenhouses*: The Southwest Opportunities Center is poised to construct two Hydroponic Greenhouses to employ their workforce clients and will grow 105K pounds of tomatoes for service to the Madison and Dubuque markets.
- 4.7 *Food Enterprise Center of the Viroqua Economic Development Association (VEDA)*: VEDA seeks operational support to help pay for staffing to provide facility management and on-site technical assistance for start-up KTS businesses in a new EDA funded 100,000 SF food-based incubator and commercial kitchen.

Other Infrastructure Related Initiatives

- 2.2 *CIAS: Trucking-Logistics Cooperative*: Complete a feasibility study of developing a trucking and logistics cooperative designed to reduce less than full truck load (LTL) deliveries in the KTS supply chain.
- 2.3 *Intermodal Rail Feasibility Study*: Study the feasibility of developing an intermodal rail facility that can serve KTS businesses in the region.
- 2.4 *CFIRE: Transportation Packaging System*: Research and develop a new durable light weight shipping container made of fiber base panel structures that will reduce distribution costs in a multi-modal system.

5.0 Trade and International Investment

Global export data is officially collected by the federal government and disseminated at state-level and MSA basis. Due to our rural nature, only 5 of the 14 counties are located inside an MSA and thus mostly sequestered. The only Department of Commerce International Trade Administration (ITA) data available relative to KTS showed 2012 total exports from the Madison MSA at \$2.3B with \$232M (10.7%) from animal production and total exports from the Janesville MSA at \$933M with \$135M (14.6%) from food manufacturing. IMPLAN estimates for 2011 (UW Extension 2014) show domestic exports totaling \$7.16B annually leaving the 14-county region for the rest of the United States. Just over \$1.0B in exports leave the 14-county region for foreign markets annually (see Table 5.1).

Table 5.1: 14-County Region Exports by Products Code (2011 IMPLAN Estimates)

Code	Description	Total Exports	Domestic Exports	Foreign Exports
1111	Oilseed and Grain Farming	\$1,109,020,000	\$684,060,000	\$424,960,000
1112	Vegetable & Melon Farming	\$14,520,000	\$8,090,000	\$6,430,000
1113	Fruit and Tree Nut Farming	\$9,940,000	\$6,170,000	\$3,770,000
1114	Greenhouse, Nursery & Floriculture Production	\$58,310,000	\$56,520,000	\$1,790,000

1119	Other Crop Farming	\$16,010,000	\$10,550,000	\$5,460,000
1121	Cattle Ranching and Farming	\$345,280,000	\$345,280,000	\$0
1123	Poultry and Egg Production	\$100,860,000	\$99,590,000	\$1,270,000
1122, 1124-29	Animal Production except cattle and poultry	\$77,290,000	\$71,500,000	\$5,790,000
3111	Animal Food Manufacturing	\$441,190,000	\$408,300,000	\$32,860,000
3112	Grain and Oilseed Milling	\$133,370,000	\$79,510,000	\$53,860,000
3113	Sugar/Confectionary Manuf.	\$117,190,000	\$11,460,000	\$5,720,000
3114	Fruit/Veg Preserving & Specialty Food	\$942,890,000	\$869,370,000	\$73,510,000
3115	Dairy Product Manuf.	\$2,658,710,000	\$2,538,170,000	\$120,540,000
3116	Animal Slaughtering & Processing	\$988,980,000	\$782,070,000	\$206,910,000
3117	Seafood Product Prep. & Packaging	\$17,070,000	\$16,330,000	\$740,000
3118	Bakeries and Tortilla Manuf.	\$141,190,000	\$136,300,000	\$4,890,000
3119	Other Food Manufacturing	\$682,680,000	\$637,150,000	\$45,530,000
3121	Beverage Manufacturing	\$328,439,000	\$309,380,000	\$19,060,000
Totals		\$8,182,930,000	\$7,169,830,000	\$1,013,090,000

Source: IMPLAN 2011 via UW Extension Center for Community and Economic Development

State level data for agriculture product exports in 2013 shows our state's top agriculture related trading partners are Canada, China, Mexico, Korea and Japan. Total agriculture exports for Wisconsin in 2013 were \$3.2B. Table 5.2 summarizes state agriculture export dollar values to each country, agriculture export ratios as a percentage of overall exports to each country, and export growth percentages of the agriculture sector versus all sectors from Wisconsin.

Table 5.2: Wisconsin Agricultural Exports by Top Five Trading Partners

Country	\$ Value—Ag exports versus total state exports	Ag Exports as % of overall State Exports by each country	Export Growth %—Ag exports versus all State Exports
Canada	\$1.5 B of \$7.5B total	20.0%	2% ag, -2% overall
China	\$298M of \$1.7B total	17.5%	65% ag, 7% overall
Mexico	\$261M of \$2.5B total	10.4%	20% ag, 16% overall
Korea	\$153M of \$431M total	35.5%	14% ag, 6% overall
Japan	\$130M of \$938M total	13.8%	23% Ag, 9% overall
Top 5 Trading Partners	\$2.342B of \$6.069 B		
All Nation Ag Total Exports	\$3.2 Billion		

Source: DATCP, Global Trade Information Service, 2014

Wisconsin ranks 13th in the nation for the value of agricultural product exports as of 2013. Madison hosts the nation's World's Dairy Expo every fall,⁴² attended by over 70,000 individuals from 100 countries with 3,000 international visitors. It's the 17th largest exposition in the country. We are global leaders in agriculture. North America and Asia are our largest agricultural export trade partners as evidenced in table 5.2. Statistically, agriculture exports are currently driving overall export growth for the state. One-third of all exports to Korea and one-fifth of all exports to Canada were agricultural products. Wisconsin exports to China increased by 65% for agriculture, while only increasing 7% for all exported goods. Agriculture is driving the growth of exports to China. Total exports have dropped 2% overall to Canada, while agriculture

⁴² Greater Madison Convention and Visitor's Bureau, 2013 World Dairy Expo Impact Report

exports are up 2%. The non-weighted percentage of export growth in Wisconsin's top five trading partners for agricultural products was 19%, while the percentage of non-weighted growth for the same countries for all industry sectors was 7.2%. Table 5.3 summarizes Wisconsin's top 10 agriculture exports in 2013. Six of the top ten products are valued added KTS products.

Table 5.3: Top 10 Agricultural Exports in Wisconsin by Product (2013)

No.	Product	\$ Value	Export Growth
1	Dairy, which includes eggs and honey	\$399 million	41%
2	Miscellaneous food such as sauces and yeasts	\$315 million	9%
3	Beverages, which includes ethanol	\$300 million	(-25%)
4	Cereal Grains	\$240 million	30%
5	Baking related, including bread, prepared cereals, fours, starches, and milks (not dairy products—includes malted milk)	\$226 million	2%
6	Raw hides and skins, not including fur skins	\$206 million	31%
7	Preserved food including canned and frozen fruits and vegetables	\$194 million	(-3%)
8	Preserved meat and fish	\$182 million	29%
9	Raw fur skins	\$176 million	46%
10	Food waste and animal feed, including pet food and dried distillers grains	\$146 million	24%

Source: DATCP, Global Trade Information Service

Aq Product Export Leadership: In 2013, Wisconsin **led the nation** in the export of whey (\$158 million), ginseng (\$38 million), sweet corn (\$47 million), and cranberries (\$52 million). Export growth for these four products in 2013 over the previous year were 44%, 101%, 1%, and -6%, respectively. Whey is a dairy by-product of cheese manufacturing and is a high source of protein. Due to the protein power of whey, 95% of Wisconsin's whey is now sold or made into value added products instead of its traditional use for spreading on agriculture fields. DATCP and Wisconsin Specialty Protein (Tera's Whey brand) were major leaders in this new market development in Reedsburg (Sauk County). China is the number one buyer of whey, taking 23% (\$36.3M) of our whey exports. Both whey and sweet corn are heavily produced in our region as evidenced by Emmi Ross (Grant County) and the presence of Del Monte (Region-wide) food processing plants.

Wisconsin **ranked second in the nation** in the export of anhydrous lactose (\$58 million), cheese and curd (183 million) and bovine semen (\$56 million). Export growth for these three products in 2013 over the previous year were 41%, 23%, and 10%, respectively. Anhydrous lactose is the inactive ingredient of most medicines. While several international artificial insemination (AI) companies make their home in our region, ABS Global in Deforest (Dane County) is our largest AI manufacturer with facilities throughout the world. All three products are dominant strengths of our region.

Wisconsin is the **number one producer of specialty cheese in the United States** and ranked second in the export of cheese. The top four importing countries of Wisconsin cheese were Mexico (\$82M), Canada (\$28M), Japan (\$22M) and Panama (\$12M) in 2013. Table 5.4 provides a listing of several major global export KTS companies.

Table 5.4: Global Food Companies in the Region

Products	Companies
Vegetables, Canning	Del Monte, Seneca Foods
Meats	Kraft Foods (Oscar Mayer), Nesvigs,
Prepared Foods	Hormel Foods, McCain Foods, Kerry Food, Frito Lay, International Ingredient Corporation, Redi Serve Foods
Bakery / Yeast / Malts	Pan-O-Gold, Bimbo, Cargill Malt
Animal Foods	Nestle Purina
Dairy	Meister Cheese/Muscoda Protein, Wisconsin Whey, Hoburg, Monfort Dairy, Foremost Farms, Organic Valley, Lactoprot, Schoeps Ice Cream, Swiss Family Farms, Emmi Roth, Saputo Cheese, Swiss Colony, Wisconsin Cheese Group, Dean Foods, Sassy Cow

Source: Madison Region Economic Partnership

Current Institutions

The following institutions provide various levels of technical expertise, support, programming and funding for export related activities.

Table 5.5: MadREP and Prosperity Southwest International Partners and Programs

Program	Agency/Organization	Services
ExporTech	MadREP, Wisconsin MEP, WEDC, DATCP, Prosperity SW	Business plan development for global exporting
Export Education Grant (EEG)	WEDC	Develop internal competence to enter or expand into global market—conferences, certifications, seminars and classes.
Int'l Market Access Grant (IMAG)	WEDC	Trade show marketing expense reimbursement
Global Network	WEDC, DATCP	Wisconsin Trade Representatives in 53 countries. Market research
Global Tech Transfer	CDR, Wisconsin Alumni Research Foundation (WARF), WEDC	Technology transfer, licensing, and marketing of new technologies
Technical Assistance	WEDC, DATCP, WMEP, Madison International Trade Association, CIBER, Milwaukee World Trade Association, WMC	Marketing, Events, Membership, Programming, Advocacy, and Resources
FDI	SelectUSA, FTZ, OFII, WEDC, DATCP, US Commerce	Federal Agency for Foreign Direct Investment, Visas, and international advocacy; Foreign Consulate Connections.

Source: Madison Region Economic Partnership

Gaps

Barriers to KTS Exports: Business growth in most industries now means growing exports. Unlike other industry sectors historically in Wisconsin, our KTS has not always looked overseas for opportunities. As energy independence and food security dominate national concerns, the global KTS market is front and center for the region and the state as a whole. Barriers to exports can be classified in five separate categories; education, language, capital, infrastructure and relationships.

Locally, the region needs to increase the number of KTS companies thinking globally like our counterparts in Asia, Latin America and Europe. New growth markets are now predominantly global, where the population, and more importantly middle class growth, exists. There are over 200 KTS second stage companies within the region that could and should be exporting in the next two years.⁴³ Training needs to start with professional development course for MadREP's economic development professional partners on global relationship building, overcoming cultural fears and language barriers, engaging in trade trips, and collecting intelligence on global opportunities before and during business site visits. These professionals have the closest relationships with KTS companies in their city or county. Once our professional partners fully embrace global opportunities, their KTS companies will follow.

Wisconsin and our partner agencies have made great strides in developing initial global technical assistance programs as evidenced in Table 5.5. Transportation costs and timeliness of product delivery, especially when dealing with perishable products, is a major roadblock to future KTS global efforts. Competition for long haul freight traffic is growing exponentially and there is a shortage of over-the-road drivers. Increased demand and limited supply is leading to increased trucking costs to get product to global market. Highway infrastructure is not sustainable in the long term as traffic congestion costs (more and more truckers are paid by the mile versus paid by the hour) and air pollution are major long-haul and long-term issues. Rail infrastructure, an important component for exporting freight overseas, is not fully developed in our region nor is the KTS organized enough to integrate nationally (see infrastructure section). Furthermore, there is a 2 ½ day delay for freight rail passing through Chicago in route to the coasts, which makes 7-day purchase to delivery timeframes difficult to meet. Container on Flat Cars (COFC's a/k/a refrigerated containers) are an expensive but necessary rail infrastructure component that is lacking for our region's non-dry value-added dairy products. Lastly, global corporations such as UPS and Walmart have extensive rail relationships and huge tonnage flows that impact access to Class I continental rail access for smaller operations. A case in point is Organic Valley, the nation's largest organic farmers cooperative with over \$1B in annual sales including exports, which might have as much product to move monthly via rail as Walmart or UPS move daily.

Foreign Direct Investment (FDI) Gap: It is difficult for the region to fully engage in FDI initiatives without fully understanding the FDI investment assets and opportunities for the region, or having an international strategy for both exports and FDI in place. MadREP proposes to first perform a KTS supply chain analysis, followed by UW-Madison/Whitewater/Platteville R&D asset mapping program. Both of these research projects will then fuel the development of an educated strategic plan for international initiatives (exports and FDI).

There is a need to have south central and south western Wisconsin KTS companies either start or expand global marketing of their products. MadREP tallied the NAICS for all KTS in the region by company size, total jobs and total sales. Our three targets are: a) the 153 KTS companies in the 2-9 FTE category employing 584 total people with total sales of \$45M, b) the 120 KTS companies in the 10-99 FTE category employing 3,504 total people with total sales of \$436 M and c) the 25 KTS companies in the 100-499 FTE category employing 5,218 people with total sales of \$2B. KTS companies in categories "a" and "b" are our biggest priority as they are not likely to be currently exporting and will be the most nimble second stage companies. Our Economic Development Organization's (EDO's) are not well versed in export or FDI opportunities. We need to educate and get them more engaged in the global market professional development. Dane County Regional Airport has a Foreign Trade Zone (FTZ) that few know about, let alone use. The FTZ can be extended throughout the region on a project by project basis (i.e. there is an existing FTZ extension in Grant County).

⁴³ UW Extension Dunns Second Stage Company Research, 2014

Historically, ExporTech graduates have averaged \$900,000 in increased exports within 9 months of graduation. Also, 5 jobs have been retained and 1.5 new jobs created for every \$1.3 million in increased exports. Once ExporTech graduate profits increase by \$150K, companies will hire a designated FTE position for solely international sales. MadREP wants to build on this historical return on investment.

Our MadREP International Steering Committee will kick off in June 2014 to lead regional international initiatives. The MadREP Trade and International Programming will need a budget for a MadREP International Steering Committee, FTE Trade/International staff person, FTZ Marketing program with Dane County Regional Airport, World Dairy Expo Marketing Program, and Farm Technology Days marketing budget.

Projects

5.1 Regional International Trade Development Program:

a. Marketing assistance for a) targeted roll out to MadREP strategic partners (EDOs) of ExporTech program and FDI initiatives, b) twenty \$2,000 grants to KTS companies to enroll in the \$7,500 ExporTech program, c) Twenty \$2,000 grants for ExporTech alumni that have increased exports over \$4M since graduating from ExporTech.

b. During the construction of a \$32 million new CDR structure, CDR will study and form a pilot program for a new Food accelerator at CDR serving the global food businesses. To help foster food export education, FDI and global involvement, MadREP's staff, International Steering Committee, WMEP, DATCP, and WEDC will do the following: Banker roundtables, CEO engagement presentations, Boardroom Briefs, Referral program for ExporTech enrollees, Accountant and Attorney Seminars, Grants for enrollees, and Expenses for Class, Food and Dairy Expositions.

5.2 Alliant Energy Center (AEC) Expansion for World Dairy Expo: Dane County has just completed a \$23.8 million improvement project (local match) at the AEC that resulted in two new facilities totaling 295,000 square feet to house the expanding World Dairy Expo. \$300,000 will be spent on exterior low energy LED lighting. To compliment these major investments, Dane County is seeking capital for replacing a 1996 sound systems, upgrades to convention hall WIFI systems (#1 complaint of WDE attendees) and credit card readers at parking gates

6.0 Operational Improvement and Capital Access

Current Capability: Data Available Regarding KTS Business Operating Costs: Operational costs in the food processing segment of the KTS industry are dominated by raw material costs through all NAICS codes (see Table 6.1). Many of these raw material inputs are sourced inside of the region, including 88% of the fluid milk and butter for dairy process manufacturing, and 45% of the processed animal meat for animal food manufacturing (see Table 2.3).⁴⁴ However, a few inputs such as flour, refined sugar and corn sweetener (as mentioned previously in the supply chain section), are almost entirely sourced from outside of the region. MadREP will use the results from the supply chain mapping analysis as well as market intelligence from business retention and expansion visits to help recruit raw material suppliers to the region (and shorten the supply chain), or promote matchmaking when the raw materials are available from existing local suppliers. Operational costs in the beverage manufacturing segment are dominated by the "other" cost category, which includes utilities, professional services, machinery and equipment, repairs and maintenance, taxes, motor vehicle licenses and special assessments.

Table 6.1: KTS Business Operation Costs (\$1,000's)

Industry	Raw Material	%	Labor	%	Packaging & Transport	%	Other	%	Total
3111 Animal Food Manufacturing	405,480	53.2	50,880	6.7	104,420	13.7	201,930	26.5	762,710
3112 Grain and Oilseed Milling	93,630	59.3	6,540	4.1	19,160	12.1	38,640	24.5	157,970
3113 Sugar & Confectionary Prod. Mfg.	47,500	43.0	16,580	15.0	15,180	13.8	31,090	28.2	110,350
3114 Fruit-Vegetable Preserving and Specialty Food Manufacturing	438,680	44.7	126,420	12.9	161,390	16.5	254,210	25.9	980,700
3115 Dairy Product Manufacturing	2,214,740	60.7	224,610	6.4	357,450	10.2	795,750	22.7	3,502,550
3116 Animal Slaughtering & Processing	676,280	55.4	227,260	18.6	83,550	6.9	232,600	19.1	1,219,690
3117 Seafood Product Prep. & Packaging	14,800	55.6	2,710	10.2	1,610	6.0	7,510	28.2	26,630
3118 Bakeries and Tortilla Manufacturing	54,670	35.6	27,930	18.2	14,970	9.7	56,170	36.5	153,740
3119 Other Food Manufacturing	274,070	45.6	65,370	10.9	88,180	14.7	174,010	28.9	601,630
3121 Beverage Manufacturing	130,360	29.6	30,780	7.0	92,570	21.0	186,090	42.3	439,800

Source: IMPLAN, 2012 via UW-Extension Center for Community and Economic Development

The KTS also enjoys a clear competitive advantage over other regions of the nation in terms of freshwater availability and wastewater treatment capacity which are vital to the success and continued growth of the cluster. A 2006 report issued by the Potsdam Institute for Climate Impact Research identified the U.S. heartland (including our region) and central Europe as the two most fertile areas in the world based upon climate, soil and water constraints.⁴⁵ Our region has the infrastructure, cost structures and support assets either in place, or that can be readily enhanced through a nominal investment, to help ensure our region's leadership position in providing food security to the national and global marketplace.

Local Institutions Which Exist to Help KTS Businesses Lower Operating Costs: In addition to supply chain assistance which will be provided by MadREP and its project partners, many local agencies and institutions exist to help KTS companies reduce business operational costs

⁴⁴ Matt Kures, UW-Extension Community and Economic Development, IMPLAN model, 2012.

⁴⁵ Suren G. Dutia, "AgTech: Challenges and Opportunities for Sustainable Growth," Ewing Marion Kauffman Foundation, April 2014.

while maintaining or increasing performance, competitiveness and ultimately profitability. Some provide direct technical assistance, several conduct research and promote product innovation, and others provide financing to commercialize new technologies and help pay for innovation and modernization efforts. These agencies and institutions, along with their primary means of assistance, are identified in Table 6.2.

Table 6.2: Local Agencies or Institutions that Help KTS Businesses Reduce Operating Costs

Agency or Institution Name	Description of Business Assistance
WI Small Business Development Centers	Business counseling & educational programs designed to support small business creation and growth. 4 SBDC's primarily serve the region, with locations at UW-Madison, UW-Whitewater, UW-Platteville and UW-LaCrosse.
Wisconsin Women's Business Initiative Corp (WWBIC)	Business and financial education services and access to financial products to KTS businesses in the region through a regional office located in Madison. Loaned \$39MM to 3,500 businesses since 1987. Approximately 14% percent of loan portfolio is invested in KTS businesses.
Service Corp of Retired Executives	A program of the SBA designed to use retired volunteers to offer business counseling and mentoring services to businesses. There are two SCORE chapters that provide service to KTS businesses in the region.
WI Innovation Kitchen	A state inspected commercial kitchen & food processing facility located in a 10,000 SF in Iowa County.
FEED Kitchen	A state inspected commercial kitchen facility located in a 5,400 SF foot facility in Madison. The facility includes five commercial kitchens with equipment for baking, produce preparation and processing, deli preparation and meat processing.
UW-Madison	A public research university established as a land grant institution in 1866. The university is organized into 20 schools including the College of Agriculture and Life Sciences (CALS). The university had research expenditures of over \$1B in 2013. Programming that benefits the KTS includes:
	<i>UW Law & Entrepreneurship Clinic</i> A program of the UW-Madison law school, the clinic provides free legal services to help entrepreneurs and small business owners with legal questions regarding starting or expanding a business. Third year law students and faculty provide counsel on issues involving corporate structure, finance, tax, intellectual property and insurance.
	<i>Center for Integrated Agricultural Studies</i> A program designed to help farmers capture a larger share of consumer food dollar while implementing sustainable systems.
	<i>Discovery to Product Program</i> A program designed to help commercialize and license new product innovation at UW-Madison, including innovations from agricultural production and processing research. The program is also focused on expanding access to key technology commercialization resources, including investment capital and proven entrepreneurial talent.
WI Manufacturing Extension Partnership (WMEP)	Provides services to small and midsize manufacturers in the areas of growth and innovation, continuous improvement, training, export assistance, supply chain management and profitable sustainability.
Forward Community Investments (FCI)	Provides financing, one-on-one advising and group training programs to nonprofit, cooperative and for profit businesses that are reducing racial, social and economic disparities. They are partners with Willy Street Cooperative in a Vendor Loan Fund designed to increase the supply of local foods in the region.
Madison Development Corporation (MDC)	Manages a business loan fund created using Community Development Block Grant (CDBG) funding to help start and expand small businesses in the region.
WI Economic Development Corp (WEDC)	The state's economic development entity which provides business development incentives, including loans, tax credits and training grants to KTS businesses looking to start or expand in the region. Markets the new Manufacturing and Agriculture Tax Credit Program, which virtually eliminates the tax on income from manufacturing businesses (including agribusiness) in the state.
WHEDA	A quasi-public agency that uses loan guarantees to promote lending to KTS businesses by private lenders. Specific programs administered by the agency include: the Credit Relief Outreach Program (CROP), which provides guarantees on agricultural production loans, and the Farm Asset Reinvestment Management (FARM) program, which provides guarantees for loans to agricultural producers who want to start, expand or modernize their operations.
DATCP	The state's lead agency on all issues dealing with agriculture and food safety. The agency also provides grants that directly benefit the KTS industry in the region and across the state including: the Dairy 30/20 Early Planning Grant Program (providing \$5,000 to develop a business plan for dairy farm start-up, modernization or expansion), and the Milk Volume Production Program (providing low-interest loans of up to \$500 per cow for the purchase of up to 400 cows).
Utilities and Focus on Energy	There are four major utilities serving the fourteen county region. Madison Gas and Electric and Alliant Energy are the two major ones. There are 6 electric cooperatives and 29 municipal electric utilities inside the 14 county region. Each entity has their own individualized programs related to loan funding, shared savings, and green programs. All contribute to the Focus on Energy Programs that covers energy efficiency and equity investments into sustainable energy capital expenditures.

Source: MadREP

The region is also home to other key industry clusters that can help support innovation in the KTS. Information technology, life sciences and advance manufacturing (three other key clusters) could advance food science and safety; foster new production methods; create next generation packing and distribution opportunities; engineer new manufacturing and agricultural equipment; and generate information technology that better connects growers, processors, distributors and consumers. The combined power of the region's research and business sectors, including the region's rapid advances in its information technology sector, could make the KTS a leader in the development of AgTech. This is a new area of innovation and investment wherein technology is used to increase agricultural productivity while reducing the environmental and social costs of current agricultural production practices. An example is the edge of field water monitoring system developed by the CEO of Water Resources Management Group (see project 3.3) while conducting research at UW-Platteville's Pioneer Farms facility.

In this sense, the KTS could be thought of as a *food innovation region* whose focus is on creating an economy at the forefront of food production, processing, distribution and consumption.⁴⁶

Power Production Issues in the Region and Opportunities for Renewable Energy: Power in the region is primarily provided by two main utility companies (Madison Gas & Electric and Alliant Energy) as well as 6 Electric Coops and 29 municipal electric utilities. The region offers KTS businesses a significant competitive advantage due to the stability and relative low cost (compared to surrounding states in the Midwest region) of the power supply. The region experiences very few power shortages and virtually no rolling blackouts. This is particularly important to food manufacturing businesses where utility costs can represent as much as seven percent of cost of goods sold (COGS) and processing plants require an uninterrupted energy supply to maintain 24/7 operations. Both MG&E and Alliant Energy generate primarily using coal, natural gas, and nuclear fuel. However, both have also recently made sizable investments in adding renewable energy sources to their portfolios (see Table 6.3).

Table 6.3: Energy Production by Type of Fuel, Madison Gas & Electric and Alliant Energy

Type of Fuel	Percent of Energy Portfolio	
	MG&E (FY2014)	Alliant Energy (FY2013)
Coal	47.8	48.0
Natural Gas	3.2	7.0
Fuel Oil	0.1	0.0
Nuclear	0.0	18.0
Renewable (Generated and Purchased)	11.8	9.0
Other Purchased Power	37.1	18.0
Totals	100.0	100.0

Source: MG&E, SEC Form 10-K, 2014; Alliant Energy Annual Report, 2013

The state has recently passed legislation requiring that 10% of each utility's energy portfolio be generated or supplied from renewable sources by 2015. MG&E has already attained that threshold, primarily as a result of its "Green Power Tomorrow" program which offers customers the ability to voluntarily purchase renewable energy for an additional \$0.04 per kWh. Alliant Energy has also recently implemented a similar program called "Second Nature" which allows customers to choose from options that charge between \$0.005 and \$0.02 extra per kWh for renewable power. The main sources for generated renewable power in the region are wind and hydroelectric. Alliant Energy has also invested in six anaerobic digesters (including three in the region managed by Clear Horizons) that generate 4.7 megawatt hours (MWh) per year.⁴⁷

KTS producers in the region have made additional investments in biodigester technology in order to reduce operating costs and deal with regulatory issues involving the handling of manure that allow for increasing herd size and increased production. Several processors have also become creative at reducing energy and other utility costs, including Wisconsin Specialty Protein which uses recaptured flue gas to reduce the plant's energy costs by 40%,⁴⁸ and Cedar Grove Cheese which uses natural microbes and a collection of hydroponic plants to biologically treat waste water on-site.⁴⁹ Wisconsin Manufacturing Extension Partnership, the state, UW-Madison, the technical colleges, and each local utility all have programs designed to work with producers and processors to reduce their energy consumption. Other conservation efforts with large potential environmental benefits being implemented in the region include: The City of Madison (the largest municipality in the region) is in the process of developing and incentivizing an aggressive residential and industrial waste reduction program and Innovation Kitchens has developed a program for turning farm production seconds (which typically have either gone to waste or been plowed back into the field) into ingredients for baking and food processing.

Profile Capital Availability in the Region: The region is served by a diverse group of lenders, including traditional commercial banks and agriculture banks managed through the farm credit system, primarily focused on asset and recourse based debt products. The region's primary agriculture lender is Badgerland Financial based in Prairie du Sac, WI. The system also includes gap lenders, such as FCI, WWBIC, Madison Development Corporation and Wisconsin Business Development, that use direct lending and loan guarantees provided by SBA and USDA through the 7a, 504, Intermediary Relending Program and Business & Industry programs to underwrite and close deals in the KTS space. Two of these lenders (FCI and WWBIC) have been designated by the U.S. Treasury Department as Community Development Financial Institution's (CDFI's). In 2012, WWBIC became one of an exclusive group of CDFI's to receive a CARS™ rating (only 6% of all CDFI's have received this rating). Slow Money Wisconsin/LION is one of the few programs that works in the region with the exclusive purpose of attracting equity to KTS projects. In 2013-14, Slow Money hosted its first two Investment Showcases featuring 17 local food entrepreneurs who have raised over \$600,000 in new investment to date.⁵⁰ The 2015 Showcase (planned for early April) will feature up to 8 additional KTS businesses. Crowd funding by businesses in the region is currently in its infancy, awaiting regulatory clarification from the Security and Exchange Commission, but could become an important equity resource for future KTS deals. Public financing is provided primarily by the WEDA, WHEDA and DATCP (see Table 6.2), as well as by numerous local governments that manage community based revolving loan fund programs.

This diverse group of lenders excels at providing debt financing in amounts greater than \$10,000 to businesses which meet traditional credit standards. According to a 2014 survey of 224 agricultural banks conducted by the Federal Reserve Bank of Chicago, 31% of reporting banks tightened their credit standards for agricultural loans in the fourth quarter of 2014 relative to the previous year despite increasing loan demand.⁵¹ Several of the lenders indicated that while demand is increasing, many businesses are not properly positioned for financing. They require the help of a coach or mentor to generate the type of information required to meet more stringent credit standards, including such

⁴⁶ Matt Kures, UW-Extension Community and Economic Development, Abstract of the Madison Region's Agriculture, Food and Beverage Industry Cluster, October 2014.

⁴⁷ Alliant Energy website, <http://www.alliantenergy.com/AboutAlliantEnergy/EnvironmentalCommitment/Renewable/030798>

⁴⁸ Isthmus, "Tera Johnson's big idea: tera'swhey," Denise Thornton, June 6, 2010, <http://www.thedailypage.com/isthmus/article.php?article=29643>

⁴⁹ Cedar Grove Cheese website, "The Living Machine," <http://www.cedargrovecheese.com/EnvironmentalPolicy.html>

⁵⁰ Slow Money Wisconsin website, <http://www.slowmoneywisconsin.org/>

⁵¹ The Agricultural Newsletter from the Federal Reserve Bank of Chicago, Number 1967, February 2015.

basic items as pro forma income statements and balance sheets, sales forecasts, marketing strategies and competitive analysis. The accelerator program that is proposed as part of this application is designed to provide one-on-one technical assistance to KTS businesses in completing these tasks in order to make them more investor and lender ready and help successfully close on project financing. WWBIC also offers this type of technical assistance to KTS businesses as part of its existing programming, which could potentially be expanded as part of its IMCP project.

Many mainstream equity investors are beginning to develop an AgTech specialization to their practice (including such notables as Kleiner Perkins, Khosla Ventures and Great Oaks Venture Capital), and the U.S. venture capital community invested \$1.07B in this space in 2014. Future investment activity is expected to increase and is already being referred to as a “Food Tech Startup Boom” in the investment press.⁵² MadREP will work to attract these dollars to our region with the potential AgTech advances discussed earlier coming out of the combined efforts of our research institutions, regional businesses and information technology business talent.

Gaps: The clear gap in the marketplace is for equity or near-equity style lending and/or smaller loans (less than \$50,000). This financing is necessary for prototyping and product innovation (in order to survive the valley of death between proof of concept and commercialization) as well as for traditional start-up capital prior to the business having a strong balance sheet. WWBIC and FCI have existing low interest debt programs that lend in this early stage high risk space, but limited funding is distributed statewide in all industry sectors. MadREP would like to partner with these entities to expand this programming to target KTS businesses.

In addition, many wholesalers and retailers have had problems securing local foods. One local retailer, the Willy Street Cooperative, surveyed its vendors and determined a lack of available capital was preventing expansion.⁵³ As a result, the cooperative teamed with FCI to create a pilot program to provide loans to vendors to expand their operations in an effort to increase supply. The pilot has successfully completed three loans to date. Sales have increased \$100,000 per year by loan recipients. MadREP would like to increase funding to this successful pilot.

Based upon this analysis of resources for operational improvement and capital access in the region, MadREP and its partners have identified seven primary projects to help address three major gaps in these operational and capital resources.

1. Technical assistance designed to increase operating efficiencies of KTS businesses.
2. Technical assistance designed to position KTS businesses for financing and investment.
3. Expansion of existing low-interest gap financing programs. Efforts will be made to see if these programs could also invest equity or near equity in projects and businesses operating in or near the valley of death.

Plans

- 6.1 *WWBIC and FCI-RLF:* Expand upon existing revolving loan fund programs that have been implemented by WWBIC as a certified SBA micro lender and CDFI, and FCI as a certified CDFI. Target early stage equity and very low interest non-recourse loans for KTS projects during prototyping and early commercialization (less than \$1.0M in sales). Assign a small business consultant to each funding recipient to provide on-going technical assistance as projects position themselves to grow market share and effectively compete in the KTS marketplace.
- 6.2 *Willy Street Cooperative-Vendor Loan Fund:* Expand upon an existing revolving loan fund that has been implemented by the Willy Street Cooperative with assistance from FCI and UWEX. Target low-interest loans to farms and food businesses in order to grow their operations and properly align supply with the increasing demand for locally grown, prepared and processed foods. Assign UWEX staff to each funding recipient to provide on-going technical assistance as projects position themselves to grow and effectively compete in the KTS marketplace.
- 6.3 *UWEX-Accelerator Program:* Create an accelerator program that would provide rigorous training and other technical assistance geared toward properly positioning sustainable food production and processing based businesses to qualify for equity and debt financing. Conduct a yearly crowd funding, Kickstarter or slow money event to allow accelerator graduates to pitch potential financing sources. Provide on-going coaching to accelerator graduates as well as access to proprietary market research from sources such as SPINS.⁵⁴
- 6.4 *MadREP-Regional Video Conferencing Equipment:* Develop a communication network using video conferencing technology, staged at existing enterprise centers and technical college facilities, to link KTS industry professionals, trade groups, and businesses throughout the region. The goal of the system is to reduce travel time and increase connectivity between coaches, mentors, industry experts and businesses to increase operational efficiencies across the industry.
- 6.5 *UWCC-Administrative Services Cooperative:* Complete a feasibility study on developing a cooperative that would specialize in providing administrative services to start-up and stage 1 KTS businesses in order to reduce operating costs and spread operational risk. Targeted services would include, but not be limited to: insurance, financial services (including general accounting and payroll), human resources, product marketing and branding, website development, and information technology services.
- 6.6 *WMEP-Profitable Sustainability Initiative:* Expand WMEP’s program which uses a comprehensive diagnostic process to assist KTS manufacturing businesses in identifying and prioritizing opportunities to improve their financial performance, as well as reduce their environmental and social footprint. Target assistance to 20 businesses over two years which WMEP projects will result in the following aggregate economic and environmental benefits: \$2M in annual plant cost savings and a reduction in electricity use by 60,000 kWh, water use by 190,000 gallons and solid waste by 90,000 lbs. per year.

⁵² CB Insights, The Food Technology Startup Boom in Graphs, March 7, 2015.

⁵³ Willy Street Vendor Loan Fund Proposal, Submitted for WSGC Board Approval, December 18, 2012.

⁵⁴ SPINS is a leading provider of retail consumer insights, analytics and consulting for the Natural, Organic and Specialty Products Industry.

Performance Measurement/Impact Evaluation

The IMCP evaluation plan was assembled by MadREP and its partners using methodologies and data sets primarily recommended by the University of Wisconsin-Extension (UWEX). Many of the benchmarks statistics can be found in the “Abstract of the Madison Region’s Agriculture, Food and Beverage Industry Cluster,” published by UWEX in October 2014 (included as an attachment in the Optional Files). Specific page references for many of the key statistics used in the evaluation plan are footnoted in Table 7.2 below. The estimates for job and revenue benefits, including the direct and indirect revenue benefits that form the basis of the cost benefit analysis identified in Table 7.1 below, were generated by UWEX using the following assumptions.

Cost Benefit Analysis Methodology and Assumptions

All cost benefit analyses were conducted using an IMPLAN model produced for the 14-county region, with revenues in constant 2015 dollars. IMPLAN tracks small changes in one part of the economy throughout the entire economy to identify the *direct*, *indirect*, and *induced impacts* of a given economic change on *jobs and revenues*. The data utilized in the impact analyses were conservative estimates of project impacts and supplemented with market research where available. Three-digit NAICS were used unless a project applied to a specific subsector, in which case 4-digit NAICS were utilized.

Important notes regarding the use of IMPLAN for this analysis: 1) these figures should be viewed as estimated economic impacts, which is not exactly the same as return on investment, as they do not look at profit generated per dollar of investment; 2) there may be external resource constraints facing some of these impacts; 3) employment and labor income multipliers are commonly high in dairy processing because a large number of inputs are purchased locally; 4) impacts arising from capital expenditures cannot be calculated for projects without knowing the subsectors in which the expenditures are made, therefore they are not included in the analysis; and 5) the estimated impacts also do not account for any potential economies of scale that may occur as a part of participating in some programs.

Due to the nature of workforce and training projects, revenue impacts are based on “*output per worker*” in a given industry (see note on NAICS code above). Additionally, estimated impact on jobs are more likely for jobs that will be *supported* rather than *generated* by a given project. In other words, many of the proposed projects will provide a pipeline of replacement workers in the KTS and will likely not directly create new jobs in the industry (job substitution). For the Innovation Kitchen Expansion IQF project (project 4.1), a technique known as a bill of goods was used where revenues from growers, processors and transportation/warehousing providers are allocated into appropriate IMPLAN categories. For projects dealing with access to capital, estimated impacts are those that occur in KTS businesses as a result of participating in each program, and are not economic impacts of administering each program. The Alliant Energy Center expansion for World Dairy Expo is a trade-related project that used historical data and on-site attendee surveys to estimate project impacts.

Total Projected Impact

Overall \$119.0M in total IMCP related project expenditures on 30 proposed projects generate the following 10 year impacts:

- 2,499 new jobs in KTS businesses
- \$822.8M in new KTS revenues
- 200 KTS accelerator program graduates
- 142 revolving loan fund (RLF) based loans to KTS businesses
- 900,000 pound reduction in solid waste output
- 1.9M gallon reduction in water consumption
- 600,000 kWh reduction in energy consumption
- Reduction in greenhouse gases and fuel consumption resulting from a renewed emphasis on rail transportation for distributing raw materials and processed goods
- \$1.5B in total direct and indirect financial benefit to the region

Table 7.1: Project Cost Benefit Analysis

Cat	Project Name	Budget			Benefit Cost Analysis		Jobs Year 2		Jobs Year 10		Direct Revenues	
		IMCP (A)	Match (B)	Ratio (B/A)	Benefit (C)	Ratio (C/A)	Direct	Total (Plus Indirect)	Direct	Total (Plus Indirect)	Year 2	Year 10
1.1	CDR: Certificate in Dairy Processing	\$109,700	\$0	0.0	\$16,670,000	152.0	9	54	9	54	\$7,890,000	\$7,890,000
1.2	MATC: Jefferson Food Production Training	\$124,280	\$0	0.0	\$31,940,000	257.0	29	119	29	119	\$17,730,000	\$17,730,000
1.3	SWTC: Instrumentation Associates Degree Program	\$825,680	\$0	0.0	\$2,130,000	2.6	12	18	12	18	\$1,360,000	\$1,360,000
1.4	SWTC: Agriculture Career Pathway	\$211,622	\$0	0.0	\$7,890,000	37.3	37	59	37	59	\$4,590,000	\$4,590,000
1.5	MATC: Reedsburg Farm Business Management Program	\$270,000	\$0	0.0	\$31,340,000	116.1	147	235	147	235	\$18,240,000	\$18,240,000
1.6	CIAS: School for Beginning Dairy & Livestock Farmers	\$90,000	\$60,000	0.7	\$17,980,000	199.8	64	107	64	107	\$10,580,000	\$10,580,000
1.7	CIAS: Specialty Crops Beginning Grower Training	\$120,000	\$80,000	0.7	\$1,510,000	12.6	4	10	4	10	\$800,000	\$800,000
1.8	Sector 67: Mobile Fabrication Laboratory	\$260,000	\$40,000	0.2	\$20,900,000	80.4	18	32	90	160	\$2,500,000	\$12,500,000
Section1 Totals		\$2,011,282	\$180,000	0.1	\$130,360,000	64.8	320	634	392	762	\$63,690,000	\$73,690,000
2.1	MadREP: SourceMap	\$400,000	\$0	0.0	\$24,100,000	60.3	14	26	70	130	\$3,000,000	\$15,000,000
2.2	CIAS: Trucking-Logistics Cooperative	\$180,000	\$120,000	0.7	\$4,860,000	27.0	0	0	21	36	\$0	\$3,000,000
2.3	CN: Intermodal Rail Feasibility Study	\$250,000	\$0	0.0	\$5,130,000	20.5	0	0	11	23	\$0	\$3,000,000
2.4	CFIRE: Transportation Packaging System	\$129,283	\$55,000	0.4	\$650,000	5.0	0	0	3	5	\$0	\$400,000
Section 2 Totals		\$959,283	\$175,000	0.2	\$34,740,000	36.2	14	26	105	194	\$3,000,000	\$21,400,000
3.1	CDR: Babcock Dairy Plant Expansion	\$1,000,000	\$30,920,119	30.9	\$595,490,000	595.5	54	328	320	1,929	\$47,916,200	\$281,860,000
3.2	Farm to Glass: Outreach for Fermented Beverages	\$206,750	\$172,750	0.8	\$4,150,000	20.1	1	1	3	10	\$250,000	\$3,000,000
3.3	WRMG: Ag Tech Edge of Field Water Monitoring	\$1,000,000	\$1,000,000	1.0	\$20,140,000	20.1	0	0	41	95	\$0	\$12,500,000
Section 3 Totals		\$2,206,750	\$32,092,869	14.5	\$619,780,000	280.9	55	329	364	2,034	\$48,166,200	\$297,360,000
4.1	Innovation Kitchen Expansion (IQF)	\$4,125,000	\$4,125,000	1.0	\$10,270,000	2.5	14	29	28	57	\$3,200,000	\$6,250,000
4.2	FEED Kitchens Expansion	\$32,068	\$20,000	0.6	\$11,480,000	358.0	8	11	85	117	\$600,000	\$6,380,000
4.3	Garver Feed Mill: 2 nd Stage Company Center Facility and Agri Tourism	\$2,500,000	\$12,974,789	5.2	\$143,200,000	57.3	70	286	130	532	\$42,800,000	\$79,490,000
4.4	Madison Public Market	\$10,000,000	\$10,000,000	1.0	\$13,950,000	1.4	0	0	86	125	\$0	\$8,510,000
4.5	Madison Culinary and Technology Center	\$1,660,000	\$1,700,000	1.0	\$244,700,000	147.4	30	52	730	1,419	\$4,450,000	\$138,010,000

Cat	Project Name	Budget			Benefit Cost Analysis		Jobs Year 2		Jobs Year 10		Direct Revenues	
		IMCP (A)	Match (B)	Ratio (B/A)	Benefit (C)	Ratio (C/A)	Direct	Total (Plus Indirect)	Direct	Total (Plus Indirect)	Year 2	Year 10
4.6	SOC: SunGarden Greenhouses	\$233,163	\$678,037	2.9	\$410,000	1.8	33	34	35	36	\$150,000	\$230,000
4.7	VEDA: Food Enterprise Center	\$100,000	\$100,000	1.0	\$9,010,000	90.1	8	13	40	65	\$1,000,000	\$5,000,000
Section 4 Totals		\$18,650,231	\$29,597,826	1.6	\$433,020,000	23.2	163	425	1,134	2,351	\$52,200,000	\$243,870,000
5.1	Regional Pilot: International Trade Development Program	\$175,000	\$75,000	0.4	\$191,500,000	1,094.3	64	139	358	823	\$18,000,000	\$112,880,000
5.2	AEC Expansion for World Dairy Expo	\$280,000	\$24,100,000	86.1	\$50,281,000	179.6	35	70	35	70	\$5,680,000	\$28,400,000
Section 5 Totals		\$455,000	\$24,175,000	53.1	\$241,781,000	531.4	99	209	393	893	\$23,680,000	\$141,280,000
6.1	WWBIC and FCI: RLF	\$2,500,000	\$2,500,000	1.0	\$30,720,000	12.3	7	25	30	104	\$4,500,000	\$18,750,000
6.2	Willy Street Coop: Vendor Loan Fund	\$250,000	\$250,000	1.0	\$4,360,000	17.4	8	17	9	20	\$2,250,000	\$2,550,000
6.3	UWEX: Accelerator Program	\$1,163,322	\$195,000	0.2	\$25,670,000	22.1	35	77	54	116	\$10,000,000	\$15,000,000
6.4	MadREP: Regional Video Conferencing Equipment	\$260,000	\$0	0.0	\$3,650,000	14.0	1	3	4	14	\$330,000	\$2,030,000
6.5	UWCC: Administrative Services Cooperative	\$30,500	\$0	0.0	\$2,990,000	98.0	0	0	6	13	\$0	\$1,750,000
6.6	WMEP: Profitable Sustainability Initiative	\$250,000	\$1,050,000	4.2	\$8,360,000	33.4	1	4	8	28	\$700,000	\$5,100,000
Section 6 Totals		\$4,453,822	\$3,995,000	0.9	\$75,750,000	17.0	52	126	111	295	\$17,780,000	\$45,180,000
Grand Totals (30 Projects)		\$28,736,368	\$90,215,695	3.1	\$1,535,431,000	53.4	703	1,749	2,499	6,529	\$208,516,200	\$822,780,000

Source: MadREP and Partner Organizations.

Table 7.2 Performance Measurement/Impact Evaluation

Name of Metric	Name of Project	Timescale of Metric	Frequency of Updates	Data Sources	Current Benchmark	Target	Additional Information on Metric
Direct Jobs Created or Retained	All Projects (See Table 7.1)	Short- and Long-Term	Annually	Project Surveys; U.S. Census Bureau, Longitudinal Employment and Household Dynamics (LEHD) Program; U.S. Bureau of Labor Statistics; IMPLAN	14,700 jobs	703 jobs (Y2); 2,499 jobs (Y10)	Direct <u>and Indirect</u> Job Creation and Retention: 1,749 jobs (Y2); 6,529 jobs (Y10)
Direct Revenues Created	All Projects (See Table 7.1)	Short- and Long-Term	Annually	Project Surveys; U.S. Census Bureau, LEHD; U.S. Bureau of Labor Statistics; IMPLAN	\$13.0B ¹	\$208M (Y2) \$823M (Y10)	Direct <u>and Indirect</u> Revenues: \$1.5B (Y10)
Non-Federal Matching Dollars	All Projects (See Table 7.1)	Short-Term	Annually	Project Surveys	\$0	\$90M (Y2)	Column B of Table 7.1; Match ratio of 3 to 1 (Non-Federal to Federal dollars)
Average Salaries/Wages	All Projects	Short- and Long-Term	Quarterly	U.S. Census Bureau, LEHD; U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages; IMPLAN	\$35 - \$45,000 per year	\$42,000 (Y2) \$47,500 (Y10)	Annual average wages paid in the region by KTS businesses ²
Change in Stage 1, 2 and 3 Establishments	All Projects	Short- and Long-Term	Annually	National Establishment Time Series Data	57% (S1); 35% (S2); 8% (S3); 0% (S4)	Year 2: 56% (S1); 34% (S2); 10% (S3); 0% (S4)	Year 10: 53% (S1); 32% (S2); 14% (S3); 1% (S4). Measured based on total number of KTS establishments at each stage 1-4 ³
Change in Location Quotient (all KTS NAICS)	All Projects	Short- and Long-Term	Annually	U.S. Census Bureau, County Business Patterns; IMPLAN	2.14	2.2 (Y2) 2.4 (Y10)	Average location quotient measured across 10 KTS subsectors (NAICS 3111 to 3119 and 3121) ⁴
Average Start-ups	Operations and Capital, and Research and Development Projects	Short- and Long-Term	Annually	National Establishment Time Series Data	15 per year	17 per year (Y2) 20 per year (Y10)	Average new KTS start-up establishments per year ⁵
Accelerator Graduates	UWEX: Accelerator Program	Short-Term	Annually	Project Surveys	0	40 (Y2)	20 graduates per year. 200 graduates (Y10) assuming program can maintain full funding for 10 years
Revolving Loan Fund (RLF) Loans	WWBIC and FCI: RLF; and Willy Street Coop: Vendor Loan Fund	Short- and Long-Term	Annually	Project Surveys	0	45 (Y2) 142 (Y10)	Total projected loans issued by both funds
CDR Program Licensing Agreements	CDR: Babcock Dairy Plant Expansion	Short-, Mid- and Long-Term	Annually	Project Surveys	1 per year	4 per year	Target attained by year 2 of the program
Change in Businesses Participating in ExporTech	International Projects	Short- and Long-Term	Quarterly	Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP), Global Trade Information Service; Wisconsin Manufacturing Extension Partnership (WMEP) ExporTech database	2 per year	5 (Y2) 50 (Y10)	Number of KTS businesses participating in WMEP's ExporTech program
Change in Value of Goods Exported	International Projects	Short- and Long-Term	Annually	Project Surveys; IMPLAN	\$1.0B	\$20M Increase (Y2); \$100M Increase (Y10)	Value of foreign exports generated by KTS businesses
Change in Transportation Modality	Supply Chain and Infrastructure Projects	Short- and Long-Term	Annually	Wisconsin Department of Transportation, Transearch Commodity Flow Data	Truck: 95% Rail: 5%	Year 2: Truck: 93% Rail: 7%	Year 10: Truck 90%; Rail 10%. Transportation mode for food products originating and terminating in the region (percent by tons)
Change in Age Structure of the KTS Workforce	Workforce Training Projects	Short- and Long-Term	Quarterly	U.S. Census Bureau, LEHD	79%	80% (Y2) 85% (Y10)	Percentage of KTS employees under Age 55 ⁶
Solid Waste Reduction	WMEP: Profitable Sustainability Initiative	Short-, Mid- and Long-Term	Annually	Project Surveys	Current Usage of Participating Businesses	90,000 lbs. per year reduction (Y2)	Aggregate annual reduction in solid waste projected by WMEP based upon 20 KTS businesses participating in the program

¹ Steven Deller, UW-Extension, Department of Agricultural and Applied Economics, “Contribution of Agriculture to the Wisconsin Economy,” 2012, page 23.

² Matt Kures, UW-Extension, Center for Community and Economic Development, “Abstract of the Madison Region’s Agriculture, Food and Beverage Industry Cluster,” October 2014, page 111.

³ Ibid., page 16.

⁴ Ibid., page 14.

⁵ Ibid., page 115.

⁶ Ibid., page 107.

Name of Metric	Name of Project	Timescale of Metric	Frequency of Updates	Data Sources	Current Benchmark	Target	Additional Information on Metric
Energy Consumption/Conservation	WMEP: Profitable Sustainability Initiative	Short-, Mid- and Long-Term	Annually	Project Surveys	Current Usage of Participating Businesses	60,000 kWh per year reduction (Y2)	Aggregate annual reduction in energy consumption projected by WMEP based upon 20 KTS businesses participating in the program
Water Consumption/Conservation	WMEP: Profitable Sustainability Initiative	Short-, Mid- and Long-Term	Annually	Project Surveys	Current Usage of Participating Businesses	190,000 gal. per year reduction (Y2)	Aggregate annual reduction in water consumption projected by WMEP based upon 20 KTS businesses participating in the program

Source: MadREP and Partner Organizations.